MOP0304001A2

Service Manual

Microwave Oven

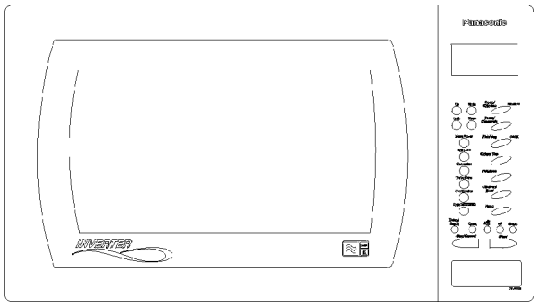
Simplified

NN-A753WBBPQ / NN-A723MBBPQ / NN-A773SBBPQ / NN-A713ABBPQ

27L

BPQ United Kingdom

Please file and use this manual together with the service manual for Model No. NN-A750WB NN-A720MB NN-A770SB, Order No.MOP0080014C2. Refer to the original service manual for technical information. All spare parts for the models listed above are included in this simplified service manual.



SPECIFICATIONS

Power source		230-240 V AC 50Hz
Power consumption	Microwave	1260W
	Grill	1360W
	Convection	1470W
	Combination	2770W
Output power	Microwave (IEC60705)	1000W
	Grill	1300W
	Convection	1400W
Microwave frequency		2450MHz
Timer		99 minutes 99 seconds
Oven cavity size		27 Litre
Outside dimensions		510 mm (W) x 477 mm (D) X 304 mm (H)
Oven cavity dimensions		359 mm (W) x 352 mm (D) x 217 mm (H)
Weight		15Kg
Specifications are subject to change without notice		

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

1. Description of operation

1.1. Auto weight defrost, Auto weight Cook

When an auto control feature is selected and the start pad pressed:

1. **The digital programmer circuit determines the power level and the cooking time and indicates the operating state in the display. The table shows the corresponding cooking times for each category and its respective weight.**
2. **When the cooking time in the display window has elapsed, the oven turns off automatically via the control signal from the digital programmer circuit.**
   Note: After auto cooking if the oven temperature is over the predetermined temperature the fan motor rotates to cool the oven and its components.

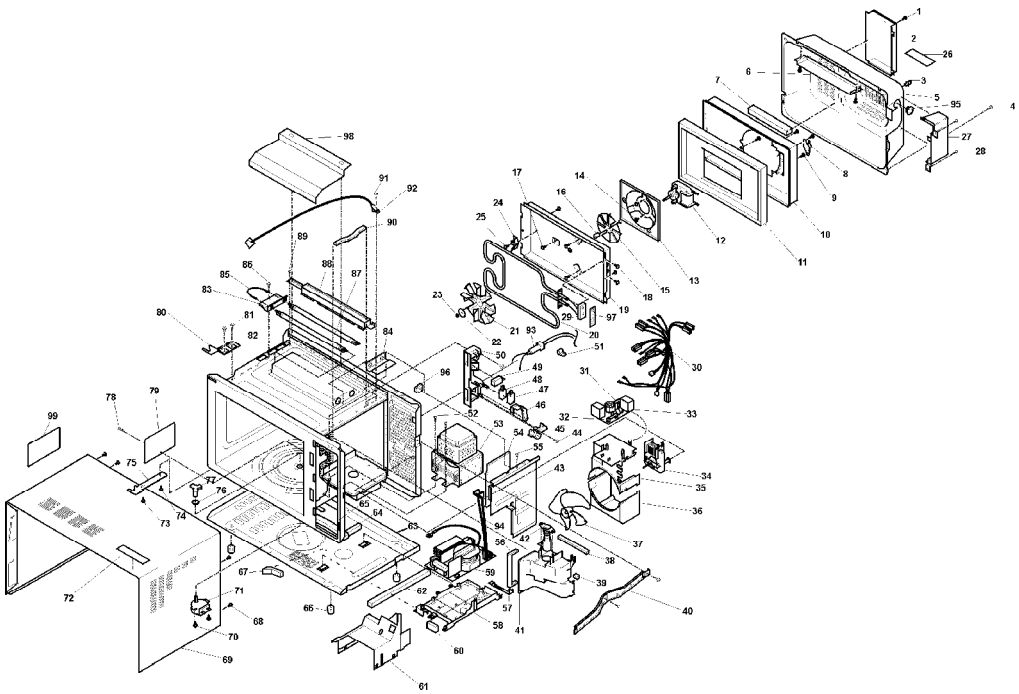
Auto Weight Defrost

Category	1st Touch Weight	Cooking Time
Bread	100g	45s
Meat Items	200g	2m 10s
Meat Joints	400g	6m 20s

Auto weight Cook

Category	1st Touch Weight	Cooking Time
1.Curry	300g	3m 30s
2.Chinese Style	200g	2m 10s
3.Pasta	250g	2m 55s
4.Casserole	300g	3m 15s
5.Fresh Fish	100g	1m 30s
6.Fresh Vegetables	100g	2m 20s
7.Chilled Crispy Top	300g	8m
8.Frozen Crispy Top	300g	12m
9.Jacket Potatoes	200g	9m
10.Frozen Potato Products	200g	8m
11.Whole Chicken	1000g	19m 20s
12.Lamb/Beef	500g	14m 40s
13.Chilled Pizza	200g	6m 40s
14.Frozen Pizza	200g	9m

2. Exploded View



3. Parts List

1. Part numbers are indicated on most mechanical parts. Please use these part numbers for part orders. Do not use the description of the part.

Important safety notice

1. Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturers specified parts.

3.1. NN-A753WBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
1		XTWANE 4 + 8BN	Screw	1	
2		E41194V00GP	Exhaust Guide D	1	
3		E6061002	Strike	1	
4		XTWANE 4+8BN	Screw	1	
5		E10584V00SBP	Back Plate Cover A	1	
6		E41074V00GP	Exhaust Guide B	1	
7		E096400TBBK	Cushion Rubber	1	
8	⚠	E61454V00BP	Thermal Cut-Out	1	
9		XTWANE 4+8BN	Screws	3	
10		E66804V00BP	Heater Cover B	1	
11		E22424V00BP	Adiabatic Material	1	
12	⚠	E490S4V00BP	Circulation Fan Motor	1	
13		E41804V00BP	Motor Bracket	1	
14		XTBANE 4+8BN	Screws	3	
15		E41594V00BP	Cooling Fan	1	
16		E41614V00BP	Fan Spacer A	1	
17		XTWANE 4+8BN	Screws	3	
18		XTBANE 4 + 8BN	Screws	2	
19		E66794V00BP	Heater Cover A	1	
20	⚠	E630G8000BP	Heater Unit	1	
21	⚠	E22394V00BP	Circulation Fan	1	
22		E41634V00BP	Fan Spacer C	1	
23		XNG4EVSL	Nut	1	
24		E64174V00BP	Heater Bracket A	1	
25		XTWANE 4 + 8BN	Screw	1	
26		E00064080BP	Warning Label	1	
27		E10594V00BP	Back Plate Cover B	1	
28		XTWANE 4+8BN	Screws	2	
29		E22594V00BP	Adiabatic Material D	1	
30	⚠	E030A6B20BP	Lead Wire Harness	1	
31	⚠	E67597550GP	10A Fuse	1	
32	⚠	ANE6230P10GN	16A Fuse	1	
33	⚠	E607X4N30BP	Noise Filter	1	

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
34	⚠	E400A4760JP	Fan Motor	1	
35		E41444N30BP	Upper Orifice	1	
36		E42094N30BP	Lower Orifice	1	
37		E4008-1640	Fan Blade	1	
38		E09020000AF	Cushion Rubber	1	
39		E09020000AA	Cushion Rubber	1	
40		E20994N30GP	Reinforcement Bracket A	1	
41		E40254N40GS	Air Guide A	1	
42	⚠	E610T5D00BP	Lamp Assembly	1	
43		E22364V00BP	Right Hand Heater Panel	1	
44		XTW4 +12T	Screw	1	
45		E31374830AP	Hook Spacer B	1	
46		E31384830AP	Hook Spacer C	1	
47	⚠	E61425180AP	Secondary Latch Switch	1	L-3C2-2
48	⚠	E61785180AP	Short Switch	1	L-2C2-2
49	⚠	AEE6142-1450	Primary Latch Switch	1	V-16G-3C26-M
50		E30208000BP	Door Hook	1	
51		AEE9108A20GN	Holder	1	
52		XTWANE 4+ 12B	Screws	4	For Magnetron
53	⚠	2M236-M42G1	Magnetron	1	
54		E22434V00BP	Adiabatic Material	1	
55		XTWANE 4 + 8BN	Screw	1	
56		AEE0926000AN	Cushion Rubber	1	
57		E66014V00GP	Inverter Earth Bracket	1	
58		E65854V00BP	Inverter Support Bracket	1	
59	⚠	E606Y4V00BP	Inverter	1	
60		E09250000BD	Cushion Rubber	1	
61		E40474V00BP	Air Guide E	1	
62		E09020000AA	Cushion Rubber	1	
63		E10014N30BP	Base Plate	1	
64		E09270000AH	Cushion Rubber	1	
65		E09270000AM	Cushion Rubber	1	
66		E1008-1180	Rubber Foot	4	
67		E09270000AM	Cushion Rubber	1	
68		XTWA 4+12CF	Screws	6	
69		E110D6B20HBP	Outer Panel	1	
70		XTW 3+6B	Screws	2	
71	⚠	E63268960JP	Turntable Motor	1	
72		E01507550BP	Outer Panel Warning Label	1	
73		XTWA 4 + 12CF	Screw	1	
74		XTWA 4 + 12DF	Screw	1	
75		E30074L00GP	Lower Hinge	1	
76		AEE2177-F80	Pulley Shaft Washer	1	
77		E21315870GP	Pulley Shaft	1	
78		XST4 + W5V	Screw	1	
79		E20554L00GS	Cover A	1	
80		E30064N30BP	Upper Hinge	1	
81		XTWA 4+12CF	Screws	2	
82	⚠	E200A4V00BP	Oven cavity	1	
83		E64604N30BP	Heater Support Bracket	1	
84		E64604N30BP	Heater Support Bracket	1	

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
85		E03594N30GP	Lead Wire Grill Link	1	
86		XTWANE4 + 8BN	Screw	1	
87	⚠	E630G8000BP	Quartz Heater	2	
88		E40244V00GP	Exhaust Guide A	1	
89		XTWANE 4+8BN	Screw	1	
90		E09230000AL	Cushion Rubber	1	
91		XTWANE 4+8BN	Screw	1	
92	⚠	E605A-1960	Temperature Sensor	1	
93	⚠	E901C6520BP	Power cord	1	
94	⚠	E030E4N30BP	H.V Lead Wire	1	
95		E90314V00BP	Holder	1	
96		E90314VOOBP	Holder	1	
97		E67579000BP	Heater bracket D	1	
98		E22784V00SGP	Upper Heater Cover	1	
99		E00064080BP	Warning Label	1	

3.2. NN-A723MBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
69		E110D5D20NBP	Outer panel	1	
72		E01507560BP	Outer Panel Warning Label	1	

3.3. NN-A713ABBPQ

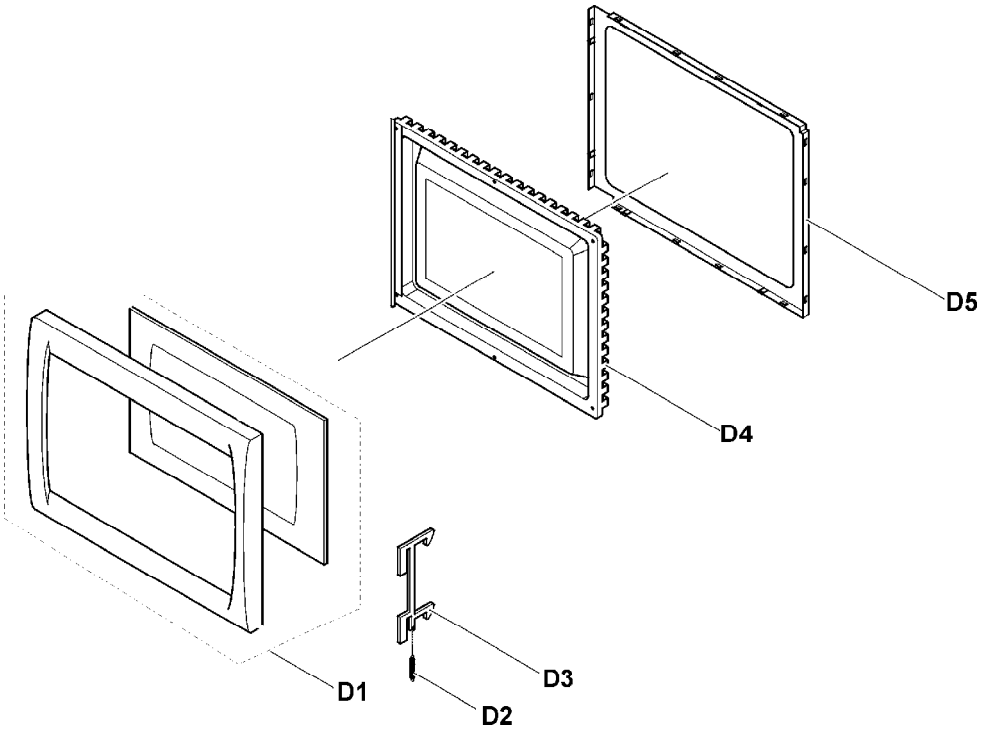
Ref. No.		Part No.	Part Name & Description	Qty	Remarks
30		E030A4V00BP	Wire Harness	1	
42		E610T6700BP	Lamp	1	
69		E110D5D20ABP	Outer Panel	1	
72		E01507560BP	Outer Panel Warning Label	1	
99		E01504V00SBP	Warning label	1	

3.4. NN-A773SBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
30		E030A4V00BP	Wire harness	1	
42		E610T6700BP	Lamp	1	
69		E110D5D20SBP	Outer Panel	1	
72		E01507560BP	Outer Panel Warning Label	1	
99		E01504V00SBP	Warning label	1	

4. Door exploded view and parts list

4.1. NN-A753WBBPQ NN-A723MBBPQ



4.1.1. NN-A753WBBPQ

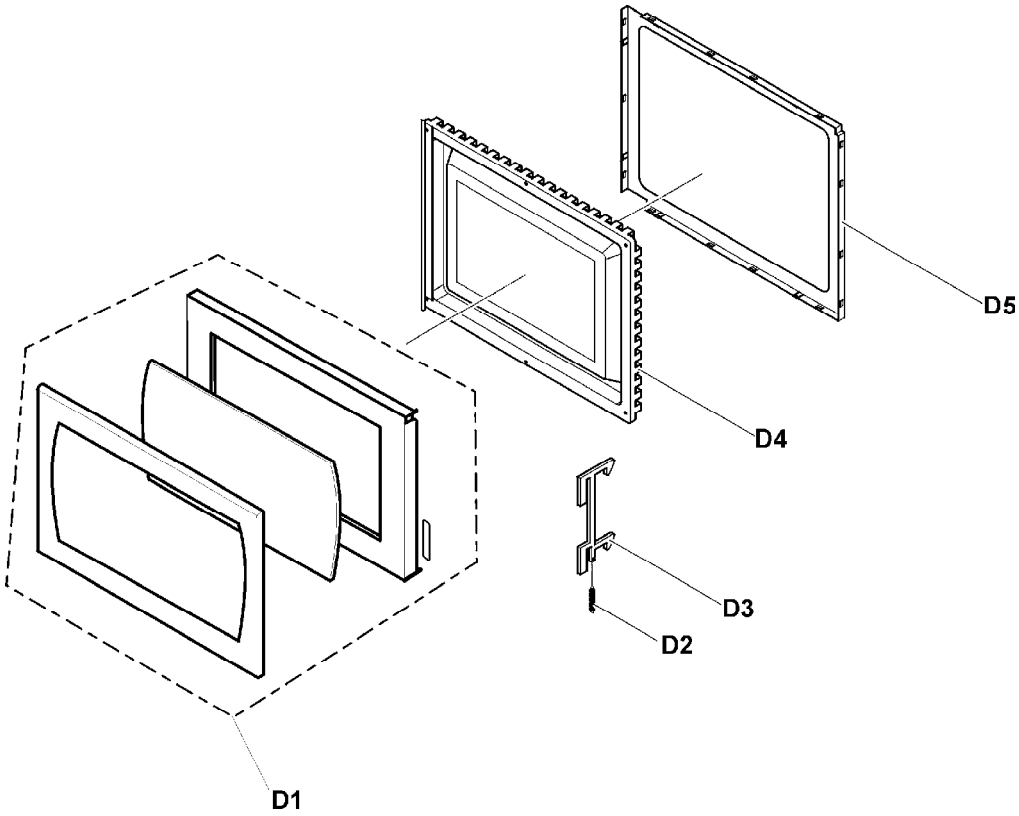
Ref. No.		Part No.	Part Name & Description	Qty	Remarks
D1		E302A6B20HBP	Door A Assembly	1	
D2		E30214000AP	Door Key Spring	1	
D3		E30184L00GS	Door Key	1	
D4	⚠	E302K4V00BP	Door E	1	
D5		E30854V00BP	Door Screen C	1	

4.1.2. NN-A723MBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
D1		E302A6B20NBP	Door A Assembly	1	
D2		E30214000AP	Door Key Spring	1	
D3		E30184L00GS	Door Key	1	
D4	⚠	E302K4V00BP	Door E	1	
D5		E30854V00BP	Door Screen C	1	

NOTE: When ordering any Door component also order door C as this part may become damaged during disassembly.

4.2. NN-A713ABBPQ NN-A773SBBPQ



4.2.1. NN-A713ABBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
D1		E302A6B20ABP	Door A Assembly	1	
D2		E30214000AP	Door Key Spring	1	
D3		E30184L00GS	Door Key	1	
D4	⚠	E302K4V00BP	Door E	1	
D5		E30854V00BP	Door Screen C	1	

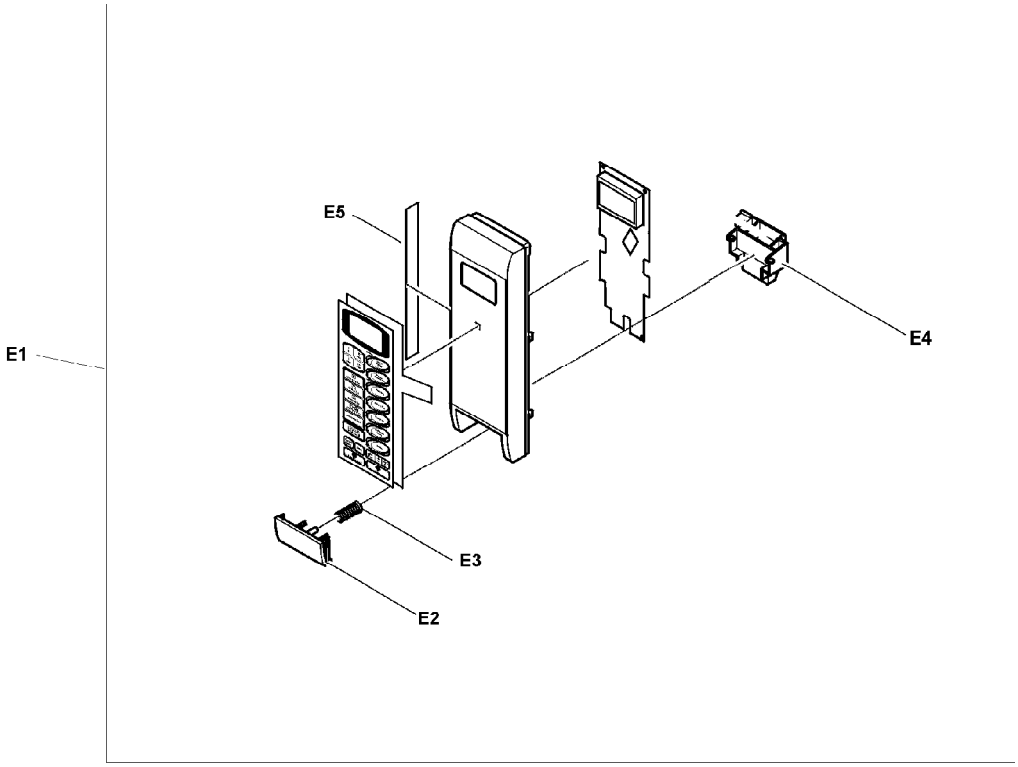
4.2.2. NN-A773SBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
D1		E302A6B20SBP	Door A Assembly	1	
D2		E30214000AP	Door Key Spring	1	
D3		E30184L00GS	Door Key	1	
D4	⚠	E302K4V00BP	Door E	1	
D5		E30854V00BP	Door Screen C	1	

NOTE: When ordering any Door component also order door C as this part may become damaged during disassembly.

5. Escutcheon base exploded view and parts list

5.1. NN-A753WBBPQ NN-A723MBBPQ



5.1.1. NN-A753WBBPQ

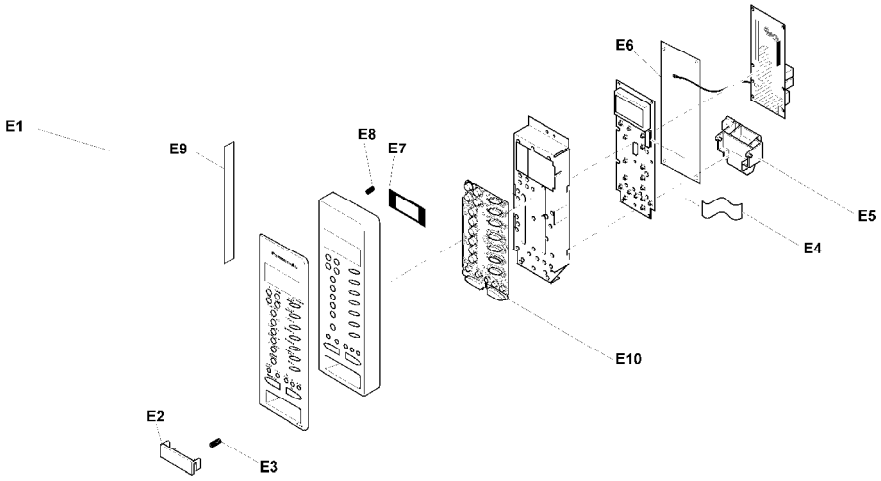
Ref. No.		Part No.	Part Name & Description	Qty	Remarks
E1	⚠	E890L6B20HBP	Escutcheon base assembly	1	Note 1
E2		E80725Q00HAP	Door opening button	1	
E3		E80375K00AP	Door opening button spring	1	
E4		E82566B20BP	Door opening lever	1	
E5		E00076B20HBP	Name plate	1	Note 2

5.1.2. NN-A723MBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
E1	⚠	E890L6B20NBP	Escutcheon base assembly	1	Note 1
E2		E80725Q00SAP	Door opening button	1	
E3		E80375K00AP	Door opening button spring	1	
E4		E82566B20BP	Door opening lever	1	
E5		E00076B20NBP	Name plate	1	Note 2

NOTE 1: If the part you need is not numbered in the exploded view, order E1 the complete assembly.
NOTE 2: When ordering a new Escutcheon base assembly (E1), also order a nameplate (E5). Write the model number and serial number of the microwave oven onto the new name plate. Fix the new name plate to the new escutcheon base assembly.

5.2. NN-A712ABBPQ NN-A773SBBPQ



5.2.1. NN-A773ABBPQ

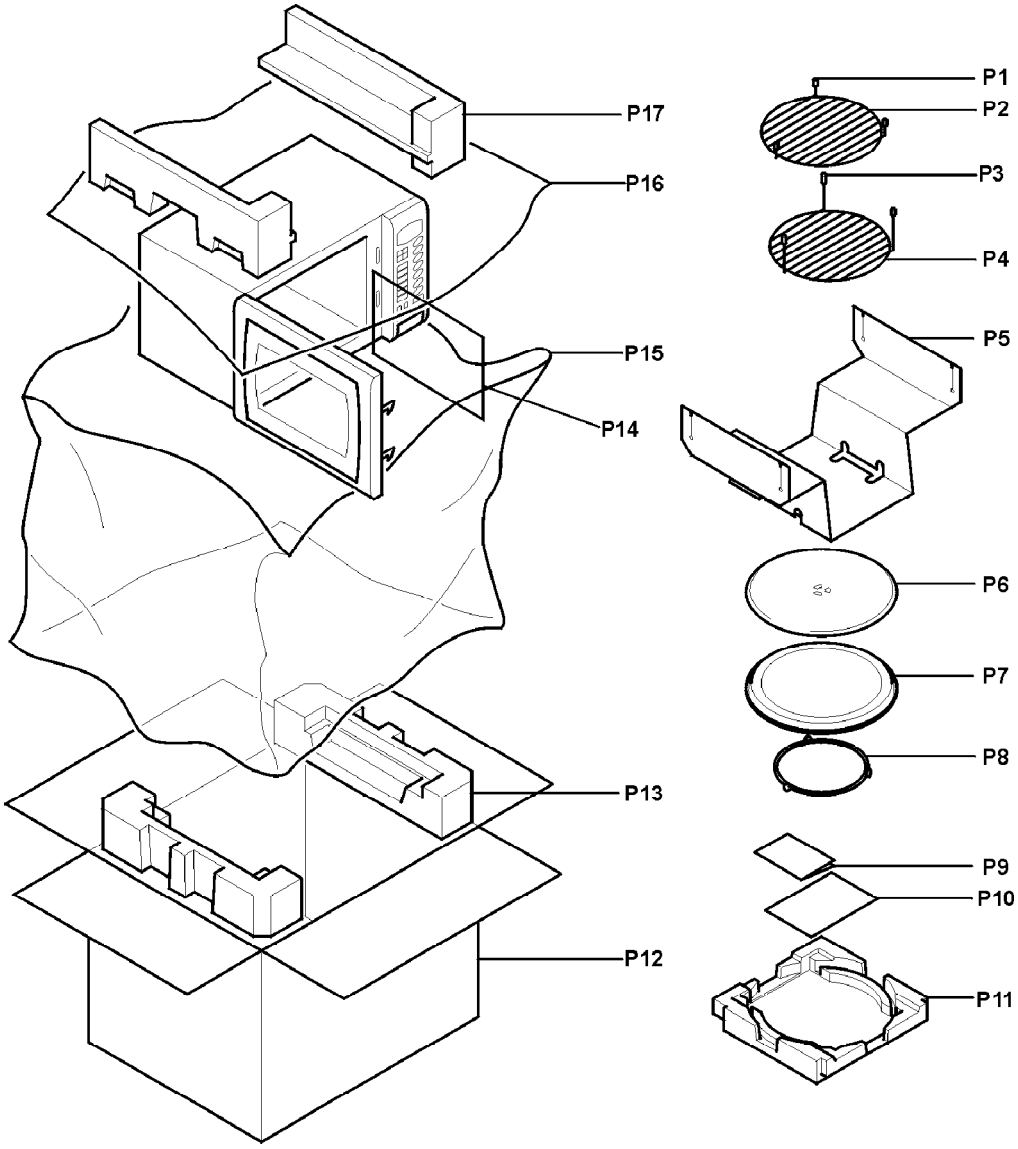
Ref. No.		Part No.	Part Name & Description	Qty	Remarks
E1	⚠	E890L6B20ABP	Escutcheon base assembly	1	Note 1
E2		E80726B20ABP	Door opening button	1	
E3		E80375K00AP	Door opening button spring	1	
E4		E66166B20BP	Ribbon cable	1	
E5		E82566B20ABP	Door opening lever	1	
E6		E80056B20ABP	PCB spacer	1	
E7		E81896B20ABP	Display window	1	
E8		E80876B20ABP	Earth spring	1	Note 3
E9		E00076B20ABP	Name plate	1	Note 2
E10		E80246B20ABP	Operation button	1	

5.2.2. NN-A773SBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
E1	⚠	E890L6B20SBP	Escutcheon base assembly	1	Note 1
E2		E80726B20SBP	Door opening button	1	
E3		E80375K00AP	Door opening button spring	1	
E4		E66166B20BP	Ribbon cable	1	
E5		E82566B20ABP	Door opening lever	1	
E6		E80056B20ABP	PCB spacer	1	
E7		E81896B20ABP	Display window	1	
E8		E80876B20ABP	Earth spring	1	Note 3
E9		E00076B20SBP	Name plate	1	Note 2
E10		E80246B20SBP	Name plate	1	

NOTE 1: If the part you need is not numbered in the exploded view, order E1 the complete assembly.
NOTE 2: When ordering a new Escutcheon base assembly (E1), also order a nameplate (E5). Copy the model number and serial number of the microwave oven onto the new name plate. Fix the new name plate to the new escutcheon base assembly.
NOTE 3: When replacing a metal escutcheon assembly, fit the earth spring to earth the metal facia to the metal back plate.

6. Packing And Accessories



6.1. NN-A753WBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
P1		E06435870GS	Rubber foot	3	RED
P2		E060V8020BP	Wire rack low	1	
P3		E06435870SP	Rubber foot	3	BLACK
P4		E060V5870SP	Wire rack high	1	
P5		E01084V00BP	Tray packing	1	
P6		E06014N30BP	Glass tray	1	
P7		E06015020VP	Enamel tray	1	
P8		E290D4N00BP	Roller ring	1	
P9		E01695750BP	Service center list	1	
P10		E00036B20BP	Operating instructions and cook book	1	
P11		E01134N30BP	Tray styrol	1	
P12		E01026B20HBP	Carton box	1	NN-A753WB
P13		E01054V00BP	Lower filler	1	
P14		E01076700BP	Door sheet	1	
P15		E01069010GS	Vinyl Cover	1	
P16		E01926430GP	Protector sheet	1	
P17		E01044V00BP	Upper filler	1	

6.2. NNA723MBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
P12		E01026B20NBP	Carton box	1	NN-A723MB

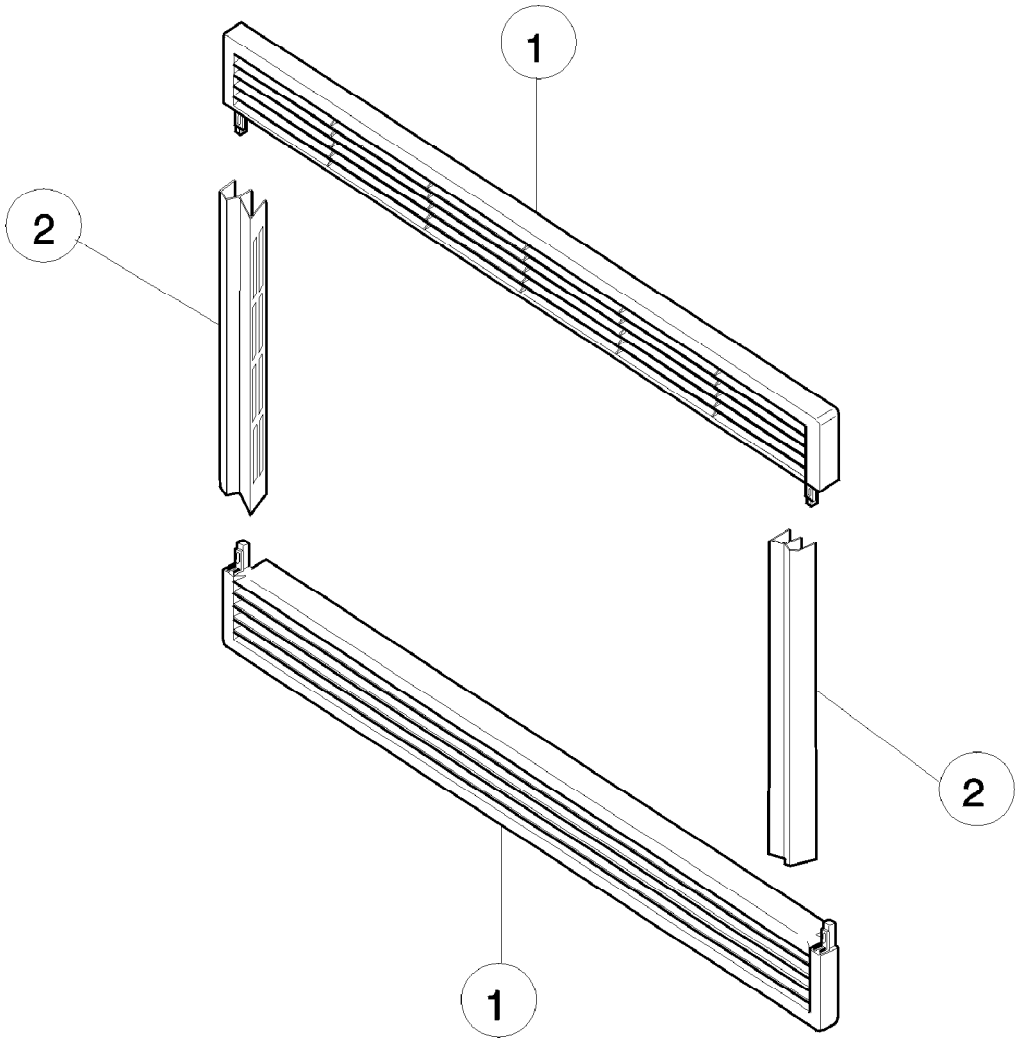
6.3. NN-A713ABBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
P12		E01026B20ABP	Carton box	1	NN-A713AB

6.4. NN-A773SBBPQ

Ref. No.		Part No.	Part Name & Description	Qty	Remarks
P12		E01026B20SBP	Carton box	1	NN-A773SB

7. Trim Kit Accessories



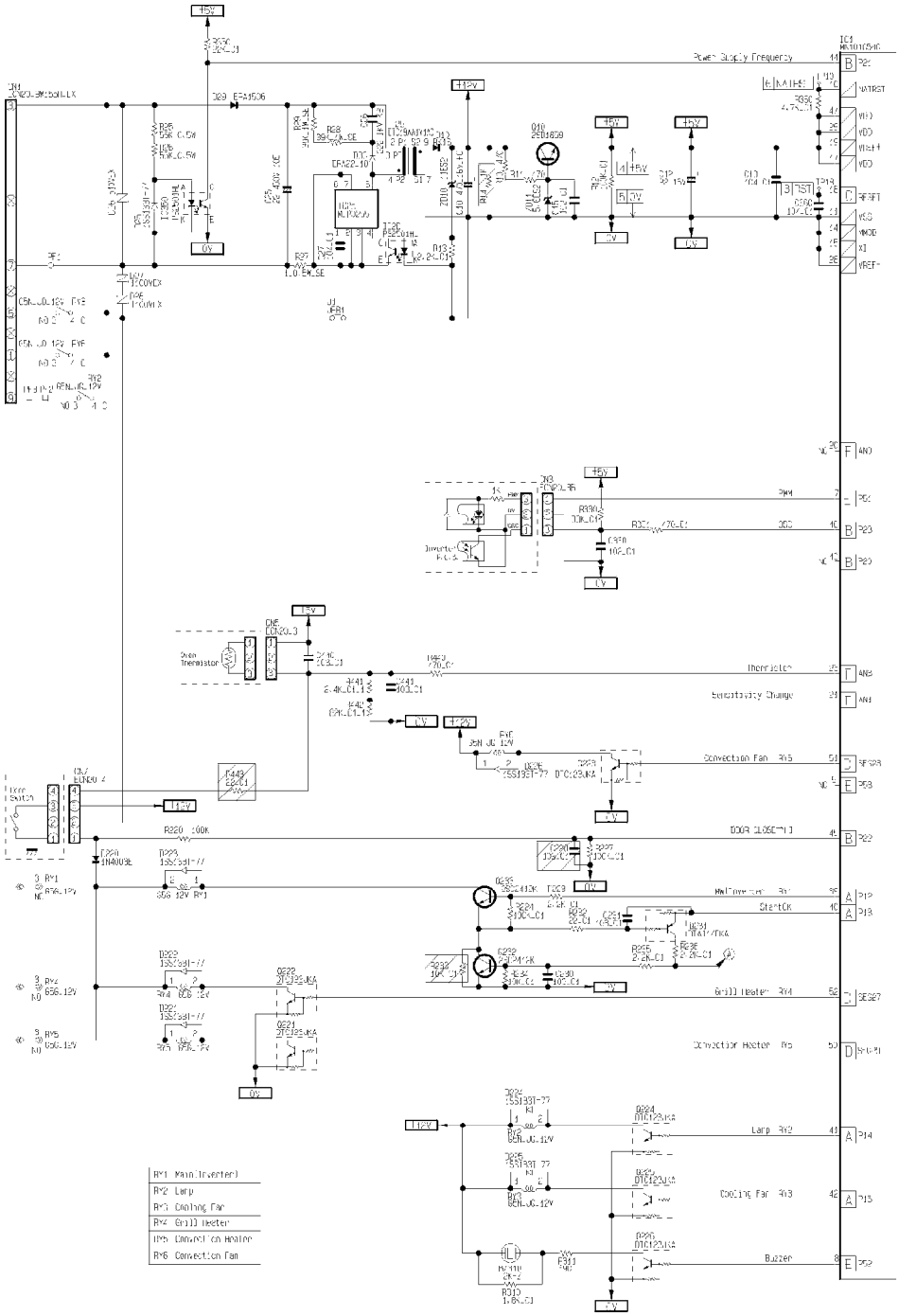
7.1. NN-A753WBBPQ

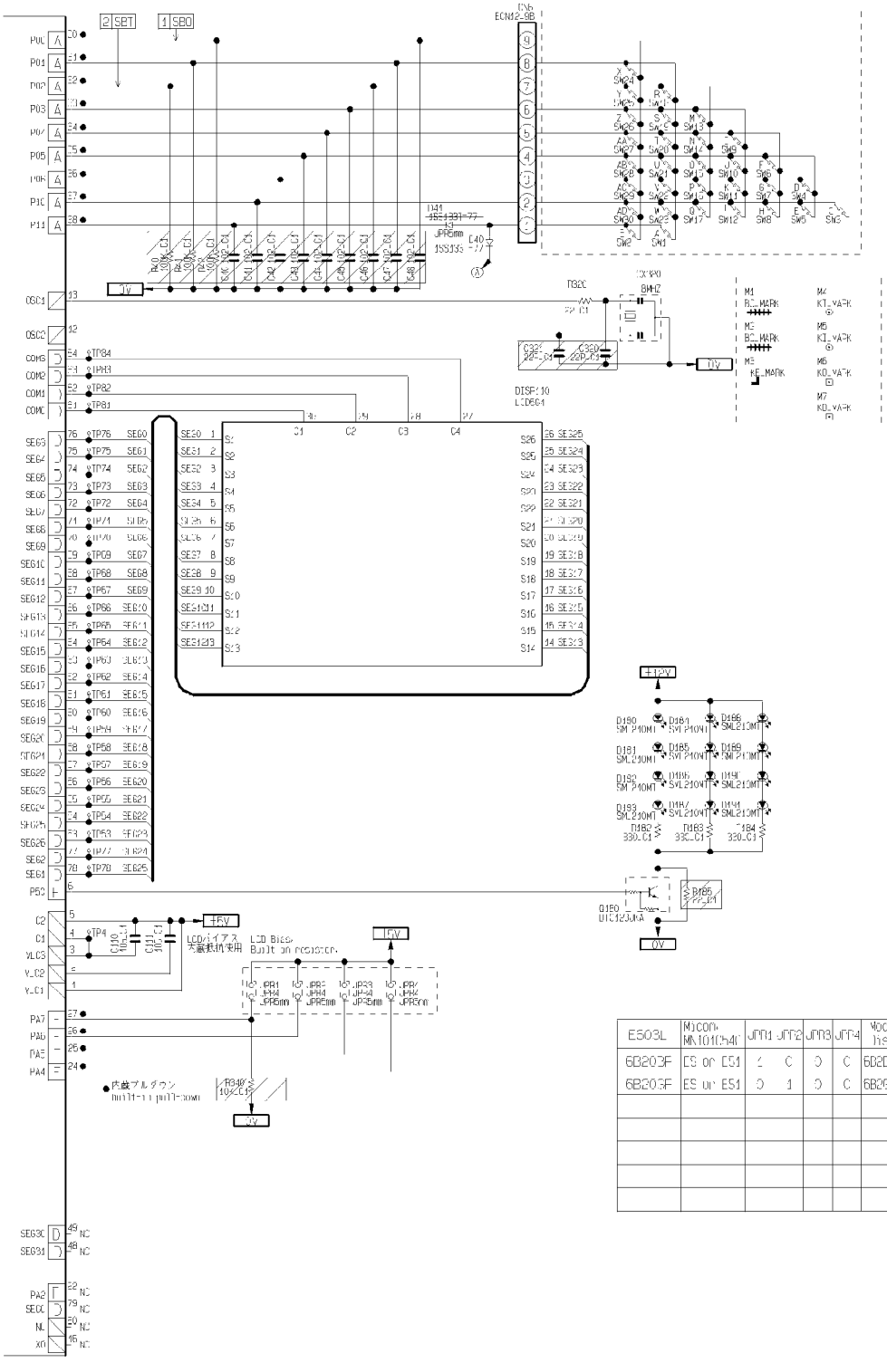
Trim model number	Top and bootom strip REF 1	Qty	Top and bootom strip REF 2	Qty	Remarks
NN-TKV673WBBP	E1603A880HBP	1	E1601A880HBP	1	NN-A753WB
	E000QA880BP				Installation guide

7.2. NN-A723MBBPQ

Trim model number	Top and bootom strip REF 1	Qty	Top and bootom strip REF 2	Qty	Remarks
NN-TKV673MBBP	E1603A510NBP	1	E1601A510NBP	1	NN-A723MB
	E000QA880BP				Installation guide

8. Digital programmer circuit


+5V
+12V
0V
Power Supply Frequency
Thermistor
Convection Fan
DOOR CLOSE
Lamp
Cooling Fan
Buzzer
RY1 Main Inverter)
RY2 Lamp
RY3 Cooling Fan
RY4 Grill Heater
RY5 Convection Heater
RY6 Convection Fan



E503L	Micom MN101C54D	JM1	JM2	JM3	JM4	Vocal Disp
6B203F	ES or ES1	1	0	0	0	6B20P2
6B203F	ES or ES1	0	1	0	0	6B20P6

Order Number MOP00080014C2

Microwave Oven

INVERTER
SYSTEM INSIDE

NN-A750WB / NN-A720MB / NN-A770SB

27L
WHITE SILVER STAINLESS
United Kingdom

SPECIFICATIONS

Specification

Power Source	**240VAC Single phase, 50Hz**
Power Requirements	**Micro 1260W Grill 1360W Conv 1470w Combi 2770W**
Output (IEC705-88)	**Micro 1000W Grill 1300W Conv 1400W**
Microwave Frequency	**2450MHz**
Timer	**99 Minutes 99 Seconds**
Oven Cavity Size	**27L**
Outside Dimensions	**510mm(W) x 477mm(D) x 314mm(H)**
Inside Dimensions	**359mm(W) x 352mm(D) x 217mm(H)**
Weight	**15Kg**

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1. Inverter Warning

The inverter board looks like a regular PCB, however, this PCB drives the magnetron tube using very high voltages and current.
It has

1. **Very high voltage and high current**
2. **An Aluminium heat sink that becomes very hot**
3. **The capacitors on the inverter circuit will contain a high voltage charge even when the oven is not operating.**

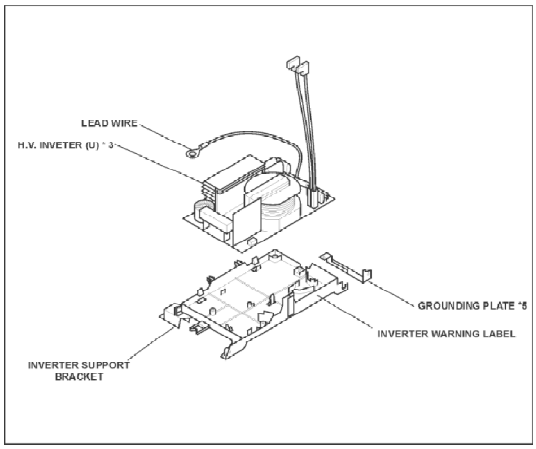
Do not

1. **Do not touch the circuitry as it contains very high voltages. When replacing the board please take extreme care to avoid possible electric shock. High voltages may remain in the circuit.**
2. **Do not touch the aluminium heat sink as it will become very hot. It also contains high voltages.**
3. **Do not attempt to repair the inverter PCB as this can be very dangerous. Replace the high voltage inverter circuit as a complete unit. Return the old unit fully repacked in the original shipping box and completed paper work.**
4. **Do not adjust or tamper with the preset volume on the inverter board. It is very dangerous to adjust this preset without proper**

test equipment.

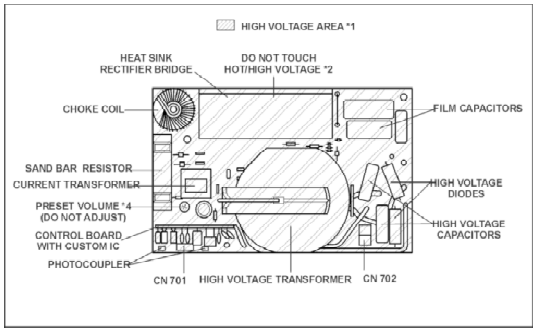
5. **Do not test the oven while the inverter grounding strip or screws are loose. It is very dangerous to operate the inverter circuit board with out a proper ground connection.**

Figure 1



Inverter Power Supply Diagram

Figure 2



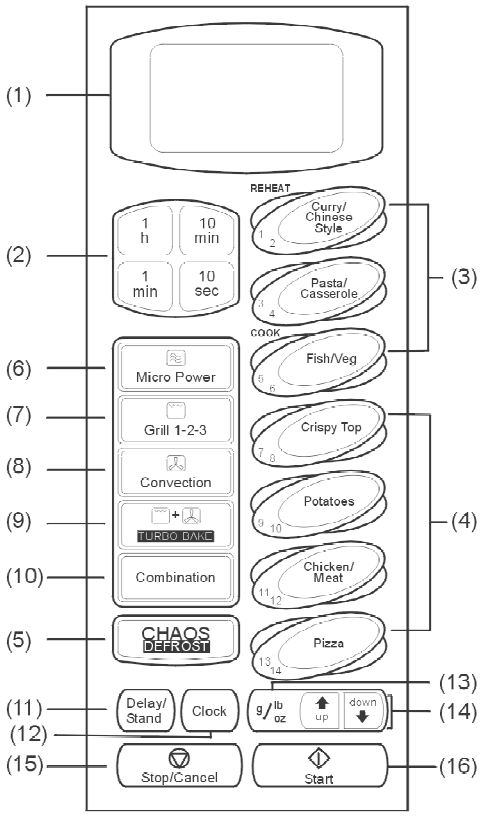
Inverter Layout

2. Feature Chart

Function	
Microwave	6
Grill	3
Convection	17
Combination	YES
Weight Defrost	3
Weight Combination	8
Weight Reheat	4
Weight Cook	2
Stage Cooking	3 Stage
Delay / Stand	Yes
Kg lb./oz.	Yes
Clock	12 Hour
Word Prompt	English

3. Control Panels

NN-A750/A720/A770*



The design of your control panel may vary from the panel displayed (depending on color), but the words on the pad will stay the same.

(1) **Display Window**
(2) **Time Pads**
(3) **Auto Weight Microwave Programs**
(4) **Auto Weight Combination Programs**
(5) **Auto Weight Defrost Programs**
(6) **Microwave Power Setting**
(7) **Grill Setting**
(8) **Convection Setting**
(9) **TURBO-BAKE pad**
(10) **Combination Pad**
(11) **Delay/Stand Pad**
This can be used to delay a Cooking program for up to 9 hrs 99 Minutes, or used to set a standing time.
(12) **Clock Pad**
(13) **lb/oz Conversion Pad**
(14) **Weight Selection Pads**
(15) **Stop Cancel Pad:**

Before Cooking
One press clears your instructions

During Cooking
One press temporarily stops the cooking program.
Another press cancels all your instructions and the time of the day will appear in the display

(16) **Start Pad**
Press to start operating the oven.
If during cooking the door is opened or the stop cancel pad is pressed once , the start pad has to be pressed once to continue cooking.

Beep Sound
A beep sounds when a pad is pressed. If this beep does not sound, the setting is incorrect. When the oven changes from one function to another, two beeps sound. After completion of cooking, five beeps sound

4. Operation And Digital Programmer Circuit Test Procedure

4.1. Setting The Clock

1. Plug the power supply cord into the wall outlet

WELCOME TO PANASONIC REFER TO OPERATING INSTRUCTIONS

2. Press the clock pad

SET TIME

3. Enter the time of the day

11:25
_ _ PRESS CLOCK

4. Press the clock pad

11 : 25

4.2. Microwave Cooking

1. Place a water load in the oven

2. Press Micro power once to set high power

HIGH

_ _ SET TIME

3. Set time at 5 sec. by pressing
1 sec. pad 5 times

HIGH

10
sec

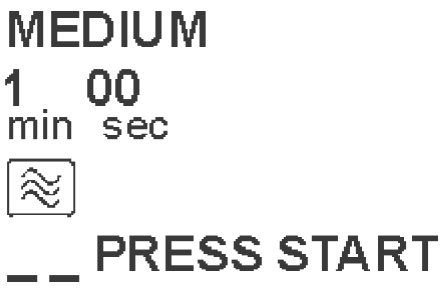
_ _ PRESS START

4. Press Micro power pad 3 times to set medium power

MEDIUM

_ _ SET TIME

5. Set pad for 1 minute by pressing 1 min. pad once



6. Press the start pad

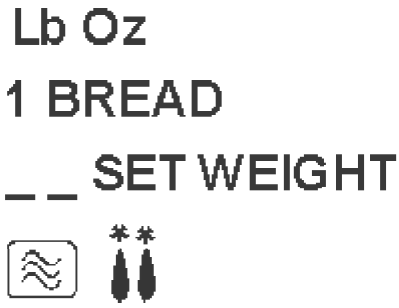
7. When the first stage cooking has elapsed oven automatically switches to second stage

8. When second stage cooking has elapsed oven bleeps 5 times and shuts off

4.3. Auto Weight Defrost

1. Select the desired program

2. Press g or lb. and oz.



3. Enter the weight by pressing the Up & Down Pads.

4. Press Start

4.4. Delay Stand

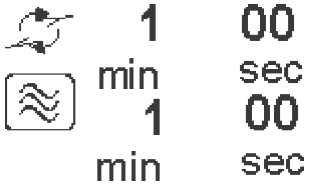
1. Set power level and time

-

2. Press Stand

3. Set standing time

4. Press Start



4.5. Delay Start

1. Press delay

2. Set delay time

3. Set power level and time

4. Press start pad

4.6. Grill Operation

1. Select grill power press once for grill 1

2. Set cooking time

3. Press start

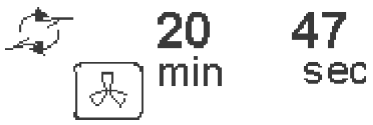
4.7. Convection Operation

1. Press convection pad to select oven temperature

2. Press start to preheat

3. Press time pads to enter cooking time

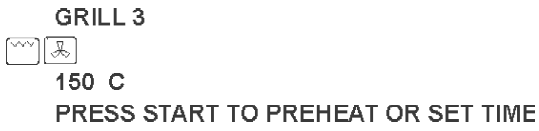
4. Press start pad



4.8. Turbo Bake Operation

1. Press turbo bake pad to select oven temperature

2. Press grill pad to select grill power



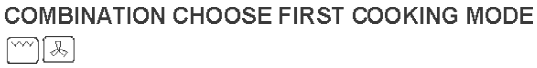
3. Press start to preheat

4. Press time pads to enter cooking time

5. Press start

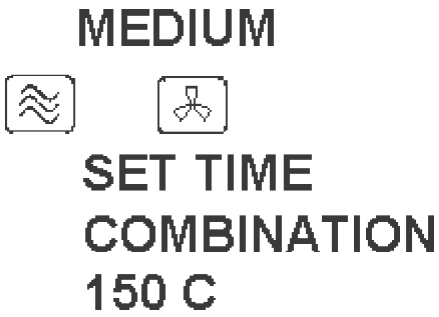
4.9. Combination Cooking (Convection And Microwave)

1. Press combination pad



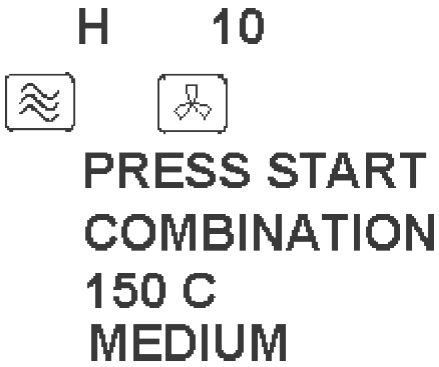
2. Press convection pad to select oven temperature

3. Select micro power



4. Press start if preheating

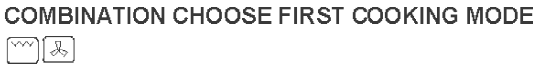
5. Set cooking time



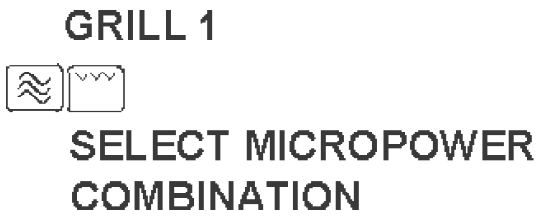
6. Press start pad

4.10. Combination Cooking (Grill And Microwave)

1. Press combination pad



2. Press grill pad to select oven temperature



3. Select micro power

4. Set cooking time

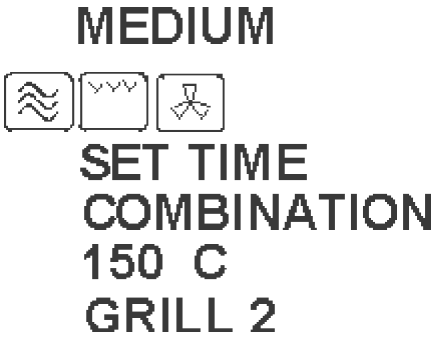
5. Press start pad

4.11. Combination Cooking (Turbo Bake And Microwave)

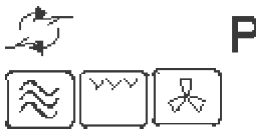
1. Press combination pad

2. Press convection pad to select oven temperature

3. Select micro power



4. Press start if preheating

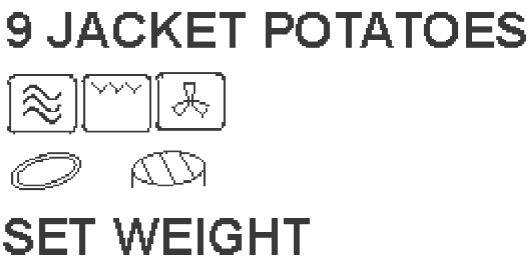


5. Set cooking time

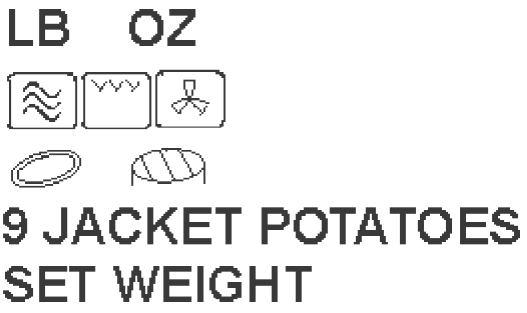
6. Press start pad

4.12. Auto Weight Cook Programs

1. Select the desired auto weight cook program



2. Press to select grams or pounds and ounces

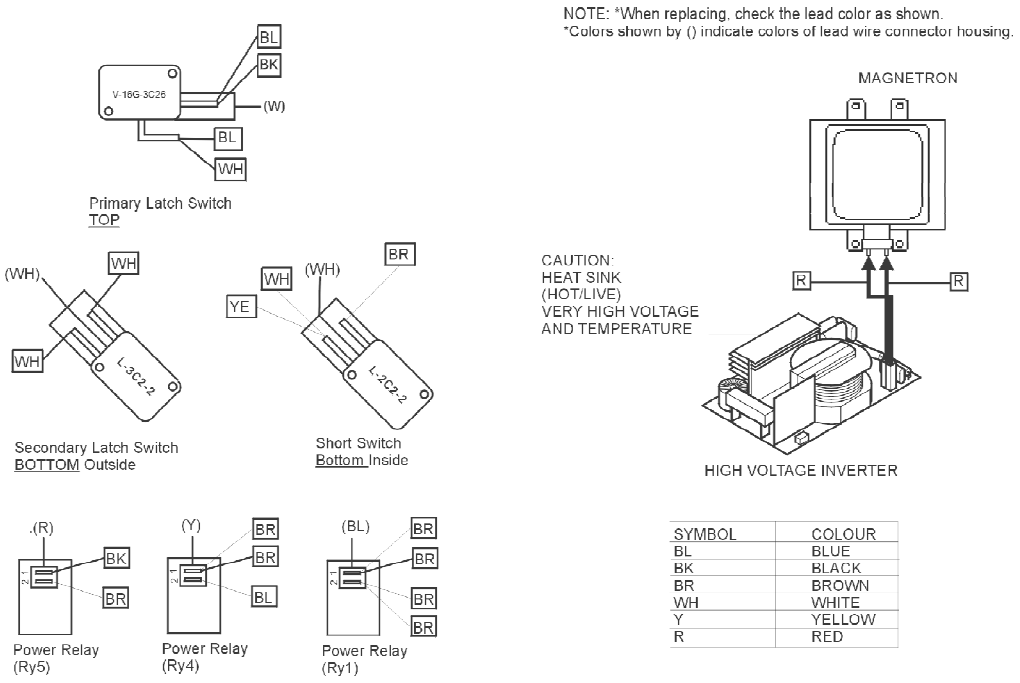


3. Enter the weight by pressing the up and down pads

4. Press Start

5. Schematic Diagram

6. Wiring Diagram



7. Description of Operating instruction

7.1. Variable power cooking control

The HIGH VOLTAGE INVERTER POWER SUPPLY controls the output power by a signal from the digital Programmer circuit DPC. The power relay (RY1) turns on to supply power to the inverter circuit. The level of output power is controlled by the drive signal level form the inverter circuit. NOTE1: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating the magnetron filament. / NOTE: 2 If microwave cooking is over 8 minutes on HIGH power, the fan motor rotates for 1 minute after cooking to cool the oven and electrical components.

Duty cycles for microwave cooking

	Output	Duty ON/OFF	
		ON time	OFF time
High	1000W	22”	0”
Defrost	440W	16”	6”
Medium	600W	22”	0”
Low	440W	22”	0”
Simmer	440W	15”	7”
Warm	440W	8”	14”

7.2. Grill Cooking

The digital programmer circuit controls the grill power by operating the power relay RY4 in the sequence shown in the table below

Duty cycles for Grill Cooking

	Duty ON/OFF	
	ON Time	OFF Time
Grill 1	33”	0”
Grill 2	24”	9”
Grill 3	18”	15”

7.3. Auto weight defrost, Auto weight Cook

When an auto control feature is selected and the start pad pressed:

1. **The digital programmer circuit determines the power level and the cooking time and indicates the operating state in the display. The table shows the corresponding cooking times for each category and its respective weight.**
2. **When the cooking time in the display window has elapsed, the oven turns off automatically via the control signal from the digital programmer circuit.**
   Note: After auto cooking if the oven temperature is over the predetermined temperature the fan motor rotates to cool the oven and its components.

Auto Weight Defrost

Category	1st Touch Weight	Cooking Time
Bread	100g	45s
Meat Items	200g	2m 10s
Meat Joints	400g	6m 20s

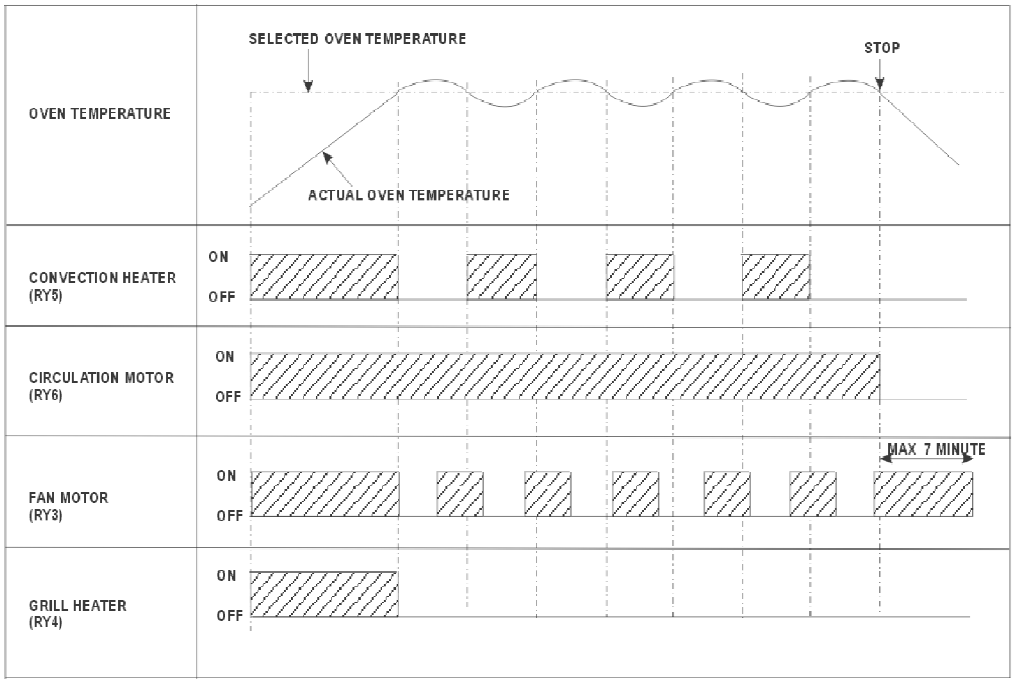
Auto weight Cook

Category	1st Touch Weight	Cooking Time
1.Curry	300g	3m 30s
2.Chinese Style	200g	2m 10s
3.Pasta	250g	2m 55s
4.Casserole	300g	3m 15s
5.Fresh Fish	100g	1m 30s
6.Fresh Vegetables	100g	2m 20s
7.Chilled Crispy Top	300g	8m
8.Frozen Crispy Top	300g	12m
9.Jacket Potatoes	200g	9m
10.Frozen Potato Products	200g	8m
11.Whole Chicken	1000g	19m 20s
12.Lamb/Beef	500g	14m 40s
13.Chilled Pizza	200g	6m 40s
14.Frozen Pizza	200g	9m

7.4. Convection Cooking

1. **The digital programmer circuit operates the power relays RY3,RY5 and RY6 in the sequence as shown in the figure below.**
2. **When the oven reaches a predetermined temperature the digital programmer circuit stops supplying power to relay RY5, resulting in the convection heater turning off.**
3. **When the temperature drops below the predetermined temperature, the digital programmer circuit supplies power to power relay RY5 resulting in the convection heater turning on. Note: After the convection process, if the oven temperature is higher than the predetermined temperature, the fan motor rotates to cool the electronic components and the oven.**

Figure1



Convection Cooking Duty Cycles

7.5. Combination Cooking

Combination cooking is achieved by operating the microwave and heater modes together during one cooking cycle. There are three combination modes.

1. Combination (convection and microwave)

2. Combination (grill and microwave)

3. Combination (grill, convection and microwave)

The digital programmer circuit operators the power relays as shown in the figures below. When the oven temperature reaches the predetermined temperature, the digital programmer circuit stops supplying power to relay (RY5) resulting in the convection heater turning off. During this time the digital programmer circuit continues to operate relay (RY1) so that microwave activity continues at the duty cycle selected. The inverter control signal level is also maintained. The microwave activity continues to cycle until the entire cooking program is completed.
When the oven temperature drops below the selected temperature, the digital programmer circuit operates power relay (RY5) switching on the heater elements.
In the case of grill combination the sequence applies with the digital programmer circuit switching power relay (RY4) to control, the grill elements.
With convection, grill and micro power combination. The grill elements and convection elements are operated alternatively whilst the oven temperature is above the selected level.

Convection And Microwave Combination Duty Cycles

Convection Heater	Micropower			
100 - 250 C		OUTPUT	ON	OFF
	Medium	600W	22	0
	Low	440W	22	0
	Simmer	440W	14	8
	Warm	440W	7	15

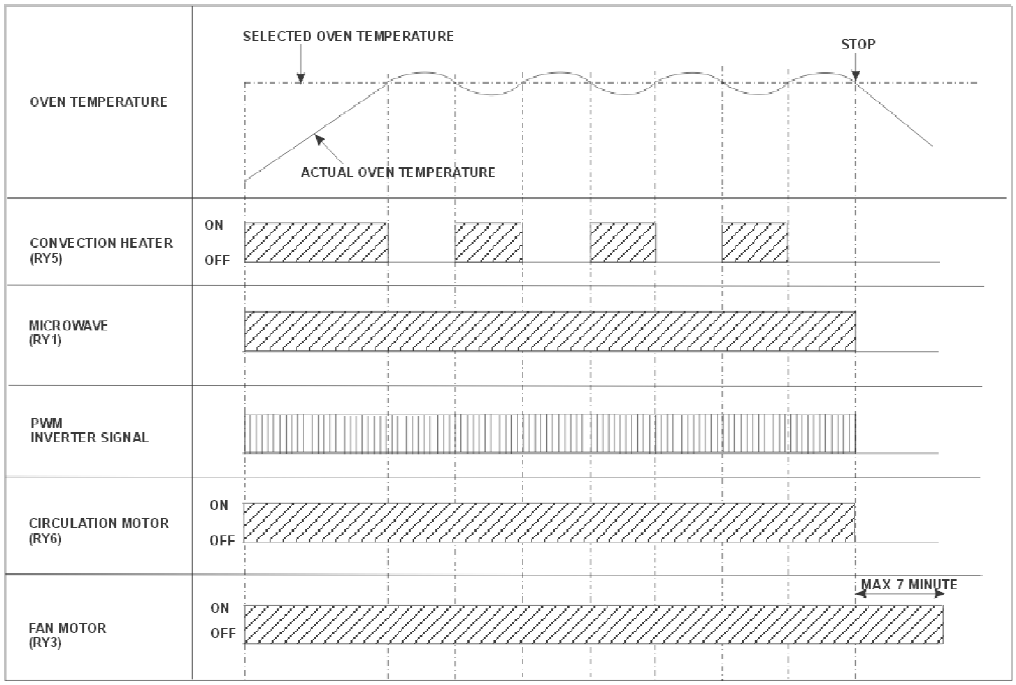
Grill And Microwave Combination Duty Cycles

Grill Heater			Micropower			
	ON	OFF		OUTPUT	ON	OFF
Grill 1	66	0	Medium	600W	22	0
Grill 2	48	18	Low	440W	22	0
Grill 3	36	30	Simmer	440W	14	8
			Warm	440W	7	15

Grill Convection And Microwave Combination Duty Cycles

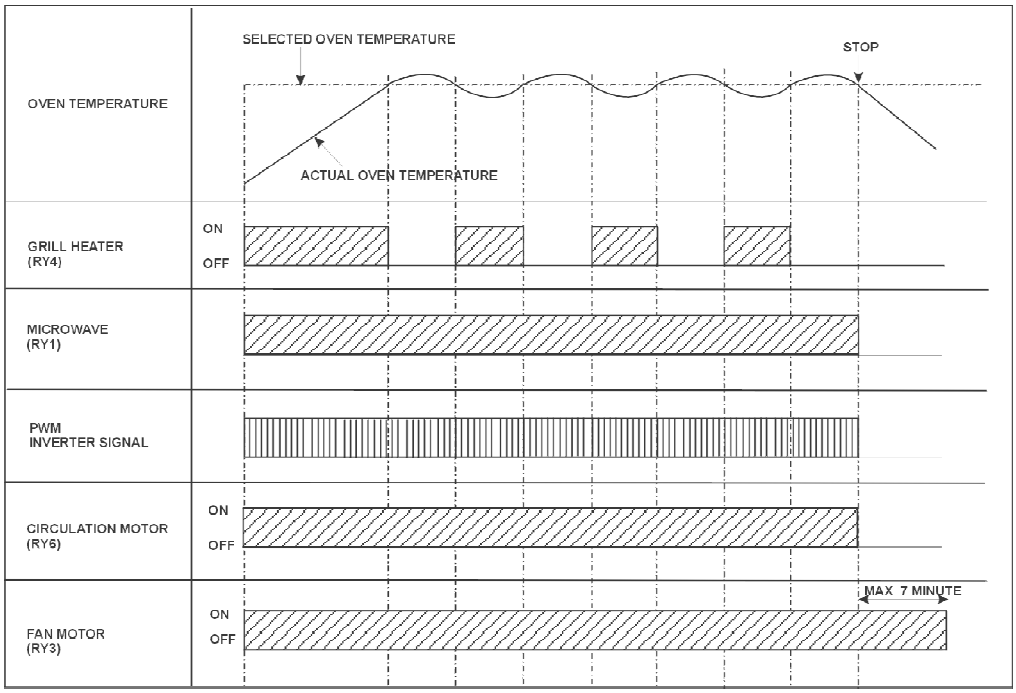
Convection Heater	Grill Heater			Micropower			
100 - 250 C		ON	OFF		OUTPUT	ON	OFF
	Grill 1	66	0	Medium	600W	22	0
	Grill 2	48	18	Low	440W	22	0
	Grill 3	36	30	Simmer	440W	14	8
				Warm	440W	7	15

Figure 1



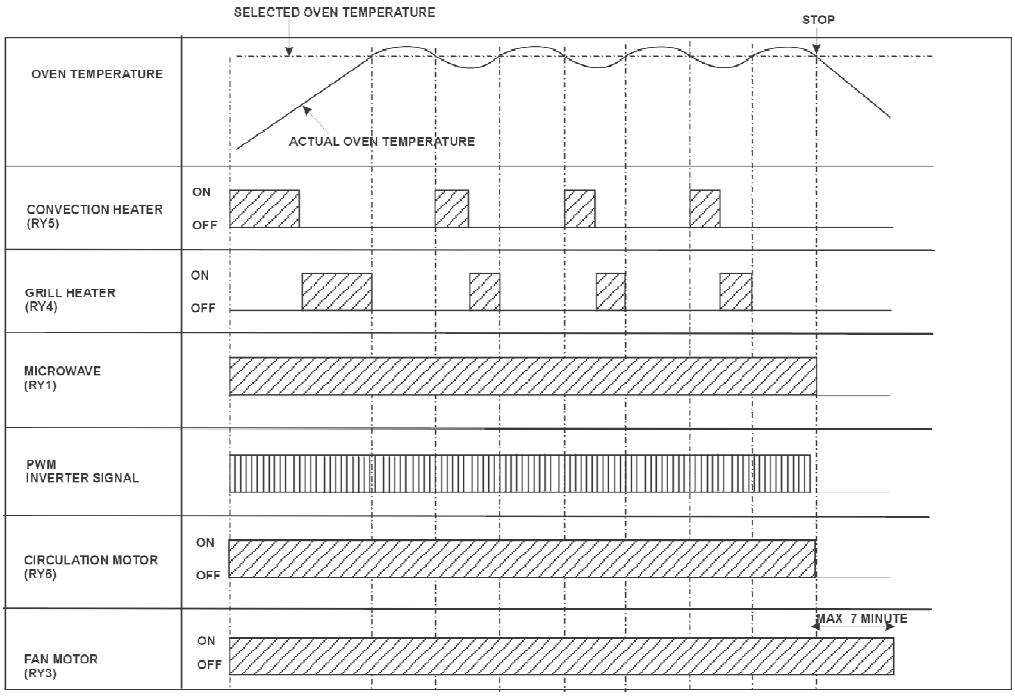
Convection And Microwave Duty Cycles

Figure 2



Grill and Microwave Duty Cycles

Figure 3



Grill, Convection And Microwave Duty Cycles

8. Cautions to Be Observed When Troubleshooting

Unlike many other appliances, the microwave oven is a high voltage, high current is device. Though it is free from danger in ordinary use, extreme care should be taken during repair.

Caution

Servicemen should remove their watches whenever working close to or replacing the magnetron.

8.1. Check the grounding

Do not operate on a two wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to ensure the appliance is properly grounded before beginning repair work.

8.2. Inverter Warnings

DANGER, HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LINE) OF THE INVERTER POWER SUPPLY (U)

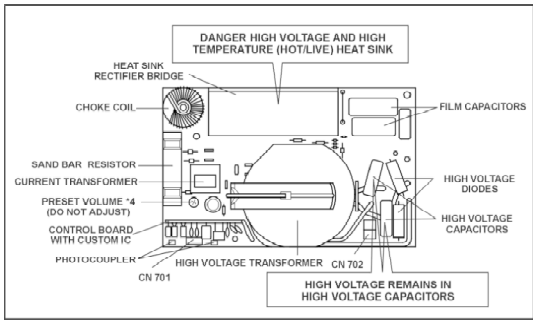
This high voltage inverter power supply handles very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flyback transformer, however, the current is extremely large and is therefore, dangerous due to this high current and high voltage.

The aluminium heat sink is also energized with high voltage (HOT), so do not touch when the AC input terminal is connected. The power devices (Collector) is directly connected to the aluminium

heat sink.

The aluminium heat sink may be (HOT) due to heat energy, therefore, extreme care should be taken during servicing.

Figure 1

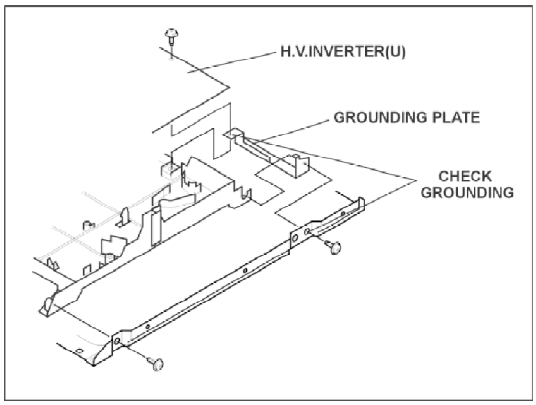


HV Inverter warning

WARNING FOR INVERTER POWER SUPPLY (U) GROUNDING

Check the high voltage inverter power supply circuit grounding. This high voltage inverter power supply circuit board must have a proper chassis ground, the inverter grounding bracket must be connected to the chassis. If the inverter board is not grounded it will expose very high voltages and cause extreme DANGER! Be sure that the inverter circuit is properly grounded via the inverter earth bracket.

Figure 2



Grounding of the inverter circuit board

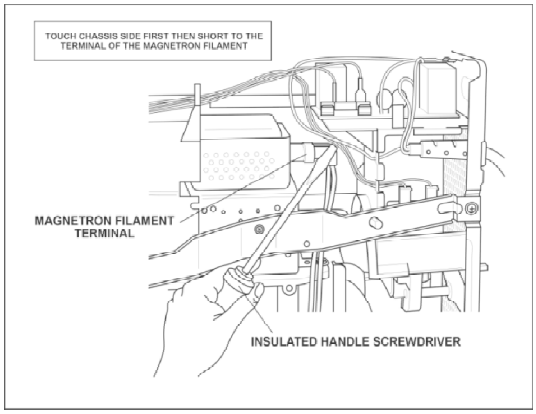
WARNING! DISCHARGE THE HIGH VOLATGE CAPACITORS

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle

screwdriver to discharge. Please be sure to touch the chassis ground side first and then short to the output terminals.

Figure 3


TOUCH CHASSIS SIDE FIRST THEN SHORT TO THE TERMINAL OF THE MAGNETRON FILAMENT
MAGNETRON FILAMENT TERMINAL
INSULATED HANDLE SCREWDRIVER

Discharging the high voltage capacitors

WARNING

There is high voltage present with high current capabilities in the circuits of the primary and secondary windings, choke coil and heat sink of the inverter. It is extremely dangerous to work on or near these circuits with the oven energized. DO NOT measure the voltage in the high voltage circuit including the filament voltage of the magnetron.

WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

8.3. When parts must be replaced, remove the power plug from the outlet.

8.4. When the 10A fuse is blown due to the operation of the short switch:

WARNING

when the 10A 250V fuse is blown due to the operation of the short switch, the primary latch switch and short switch must be replaced. It is also important to change the power relay 1 (RY1) when the continuity test shows shorted contacts.

1. **This mandatory. Refer to “adjustments and measurements” for the location of these switches.**
2. **When replacing the fuse, confirm that it has the appropriate rating for these models.**

3. When replacing faulty switches, be sure the mounting tabs are not bent, broken or deficient in their ability to hold the switches.

8.5. Avoid inserting nails, wire etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any holes or gaps, because such objects may work as an antenna and cause microwave leakage.

8.6. Confirm after repair

1. After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. Microwaves might leak if screws are not properly tightened.
2. Make sure that all electrical connections are tight before inserting the plug into the wall outlet.
3. Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage).

CAUTION MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY

IMPORTANT NOTICE

The following components have potentials above 250V while is appliance is operated.

- **Magnetron**
- **High voltage transformer (Located on inverter (U))**
- **High voltage diodes (Located on inverter (U))**
- **High voltage capacitors (Located on inverter (U))**

Pay special attention in these areas.

When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/ cm_3. After repair or exchange, it is very important to check if the magnetron and the door hinges are correctly fixed.

8.7. Sharp Edges

Caution

Please use caution when unpacking, installing or moving the unit, as some exposed edges may be sharp to touch and cause injury if not handled with care.

9. Parts Replacement Procedure

9.1. Magnetron

1. Discharge the high voltage capacitors on the inverter circuit.
2. Remove the screw holding the air guide
3. Remove the two screws holding the tie bar
4. Remove the oven lamp and lead wire harness cables form the air guide A.
5. Remove the air guide A
6. Disconnect the two high voltage leads from the magnetron
7. Remove the four screws holding the magnetron

NOTE: After replacing the magnetron, tighten the mounting screws making sure that there is no gap between the waveguide and the magnetron to prevent microwave leakage.

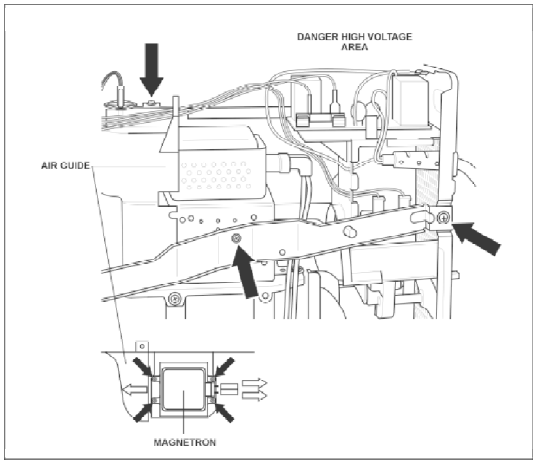
Caution

When replacing the magnetron, ensure that the antenna gasket is in place.

Note

The magnetron used for this model is unique for the inverter power supply system. Make sure to use the one as listed in the parts list.

Figure 1



Removal of the magnetron

9.2. Inverter power supply (U)

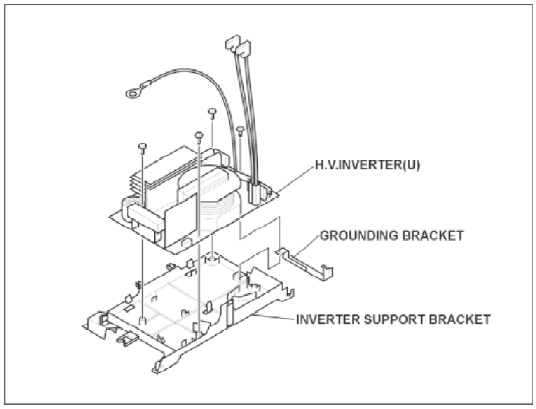
1. Discharge the high voltage capacitors
2. Remove two screws holding the tie bar.
3. Unplug the H.V. Lead wires from the magnetron

4. Remove the one screw holding the earth wire to the magnetron
5. Remove the connector CN701 and CN702 from the inverter PCB
6. Remove the two screws holding the inverter base to the chassis (See figure 2)
7. Carefully remove the inverter PCB and support base from the oven.
8. Remove the air guide E by un-clipping the catch hooks
9. Remove the four screws holding the PCB to the inverter support base.

Caution when replacing the inverter power supply (U)

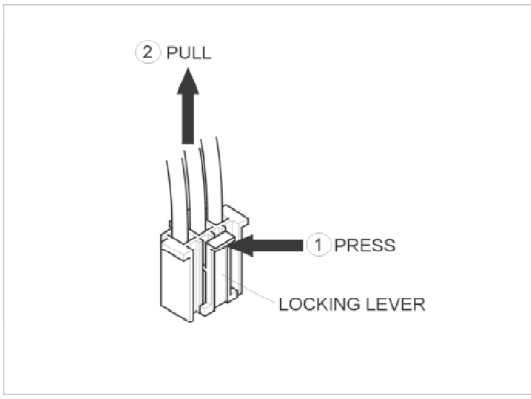
1. Make sure that grounding plate is in place
2. Securely tighten the grounding screw through the side of the chassis (Base).
3. Securely connect the 3 lead wire connectors
4. Make sure that the heat sink has enough space (gap) from the oven. Take care not to touch any lead wire to the aluminium heat sink because it is hot.

Figure 2



Removal of the inverter PCB

Figure 3



Disconnecting the PCB lock connector

9.3. Digital Programmer Circuit (DPC) and membrane key board.

NOTE: Ground any static electric built up on your body before handling the DPC.

1. **Disconnect all connectors from the DPC.**
2. **Remove the two screws holding the escutcheon base and slide the escutcheon base upward slightly. removal is easier with the door open.**
3. **Release the flat cable.**
4. **Remove the six screws holding the DPC DU assembly**
5. **Remove the door lever**
6. **Remove the seven screws holding the DPC AU assembly**

To remove escutcheon pad

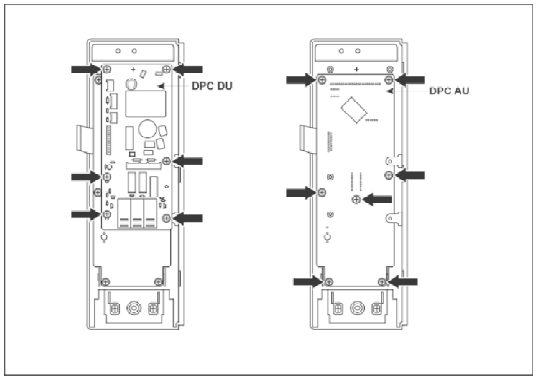
1. **Remove the escutcheon bracket from the escutcheon base by freeing the 4 catch hooks on the escutcheon base.**
2. **Peel away the display window from the inside of the base.**
3. **Remove the membrane assembly by pushing from the inside of the base and then peeling away from the outside surface.**

NOTE:

1. **The escutcheon key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal**
2. **When installing a new escutcheon key board, make sure that the surface of the escutcheon base is cleared sufficiently so that problems such as, shorted contacts and uneven surfaces can be avoided.**

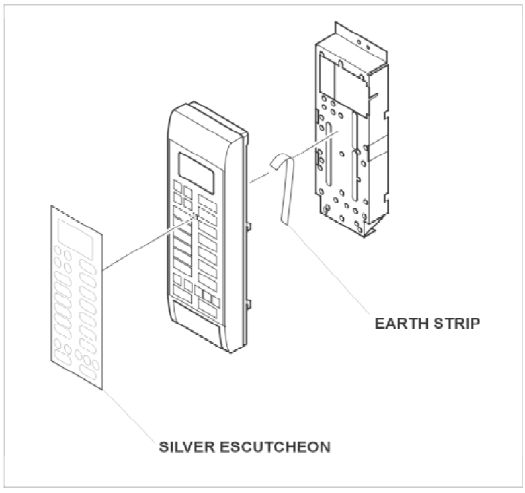
3. **When replacing the silver escutcheon sheet (NN-A720MB) ensure that the escutcheon sheet is earthed to the back-plate via the earth strip.**

Figure 4



Removal of DPC AU and DPC DU

Figure 5



Grounding of the silver escutcheon

9.4. Low voltage transformer and/or power relays (RY1)

Note

Be sure to ground your body to discharge any static before handling the DPC.

1. **Using a solder wick or a de soldering tool and a 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.**
2. **With all of the terminal pins cleaned and separated from the DPC contacts, remove the defective transformer/power relays and install the new components making sure that the terminal pins are inserted completely. Carefully re solder all terminal contacts**

carefully.

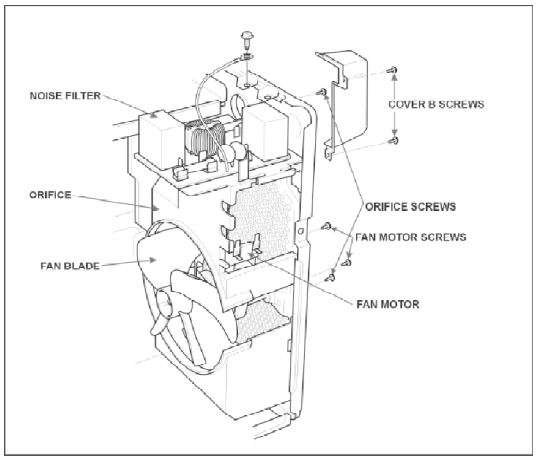
Note

Do not use a soldering iron or de soldering tool of more than 30 watts on DPC contacts

9.5. Fan Motor

1. Remove two screws and remove the tie bar
2. Disconnect the two lead wires from the fan motor terminals
3. Disconnect all lead wires from the noise filter
4. Remove the noise filter
5. Remove the air guide by removing the two screws
6. Remove the two screws holding the orifice assembly
7. Remove the two screws holding the fan motor assembly
8. Detach the orifice assembly and the fan motor assembly from the oven assembly.
9. Remove the fan blade from the fan motor by pulling outward.

Figure 6



Removing the fan motor

9.6. Door disassembly

1. Remove door C from door E by carefully pulling outward starting from the upper right hand corner using a flat blade screwdriver.
2. Remove four screws holding the door E to the door A assembly
3. Remove the door screen B by carefully un-clipping the screen from the door A catch hooks. Care must be taken not to damage

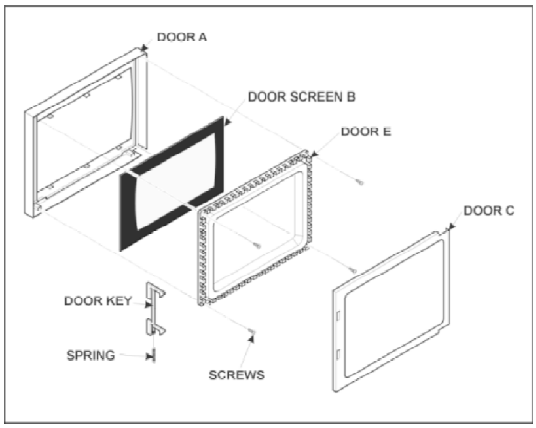
these hooks during disassembly.

4. Remove the door key and spring form the door E

After replacement of the defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent excessive microwave leakage.

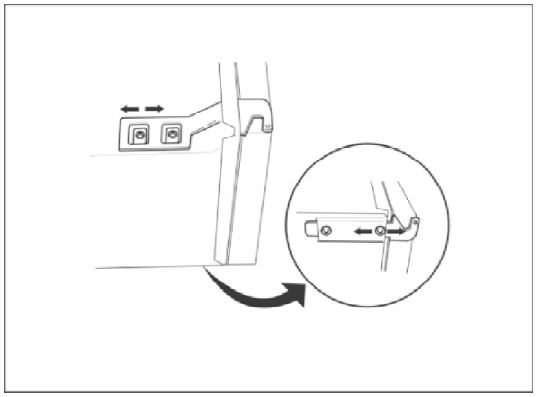
1. When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge in the direction necessary for proper alignment.
2. Adjust so that the door has no play between the inner door surface and the oven front surface. if the door assembly is not mounted properly, microwave power may leak from the clearance between the door and oven.
3. Perform the microwave leakage test.

Figure 7



Disassembly of the door

Figure 8



Adjusting the door hinge

9.7. Turntable Motor

1. Remove the motor cover by breaking off at the 8 spots indicated

by the arrows.

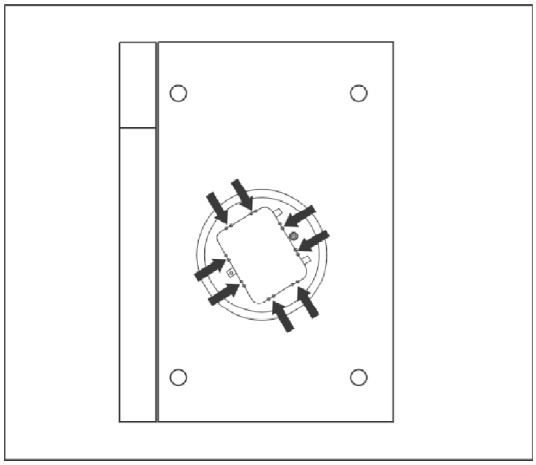
2. Disconnect the two lead wires connected to the turntable motor

3. Remove the turntable motor by removing the two screws

Note: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bent inside so that no sharp edges are exposed.

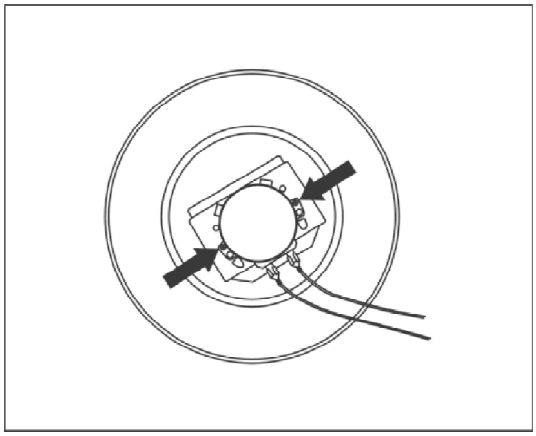
Note: To secure the motor cover use a 4 x 6 screw.

Figure 9



Removing the turntable motor cover

Figure 10



Two screws to remove the turntable motor

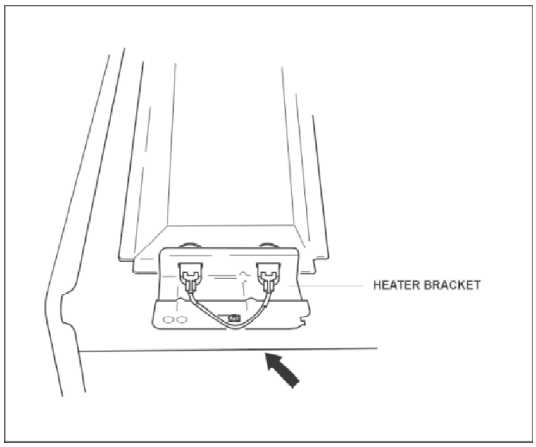
9.8. Quartz Heater

1. Disconnect the lead wires from the heater terminals

2. Remove one screw holding the heater supports

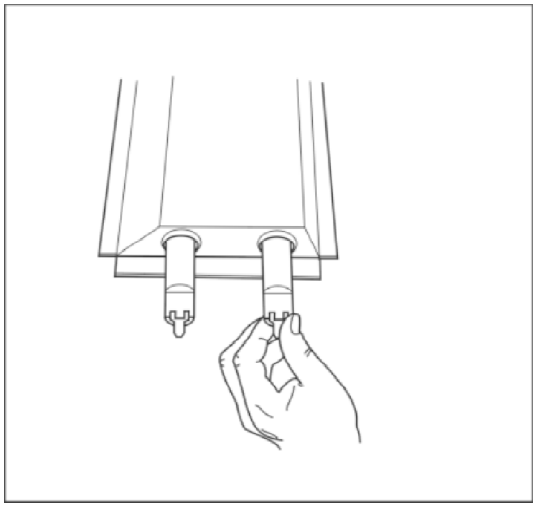
3. Remove the heater

Figure 11



One screw to remove the grill bracket

Figure 12



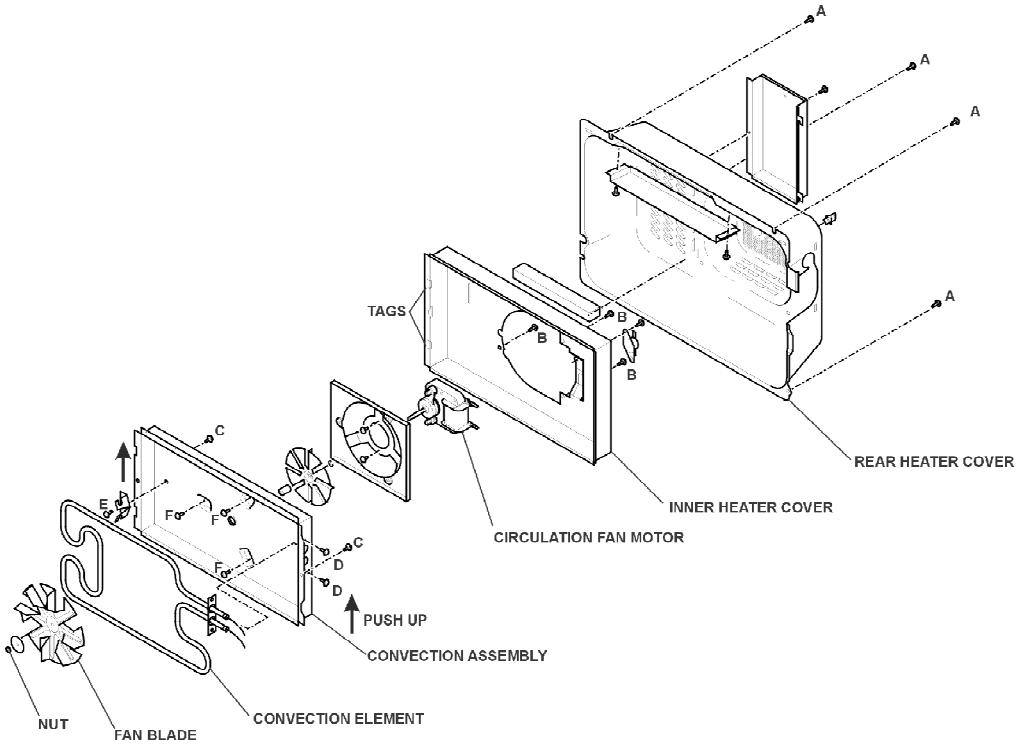
Removing the grill element

9.9. Convection Element And Circulation Fan Motor

1. **Remove the four screws A holding the rear heater cover.**
2. **Remove the wire terminals from the thermal cutout, circulation fan motor and the convection elements.**
3. **After removing the rear heater cover, remove the three screws B holding the inner heater cover.**
4. **Un clip the metal tags to remove the inner heater cover.**
5. **Remove the two screws C holding the convection assembly, push upwards to remove.**
6. **To remove the convection element remove the one screw E on the convection bracket A and 2 screws D on convection bracket B**
7. **Release the circulation fan nut to remove the circulation fan blade.**

8. Remove the three screws F to release the circulation fan motor assembly.

Figure 13



Disassembly of the rear convection assembly

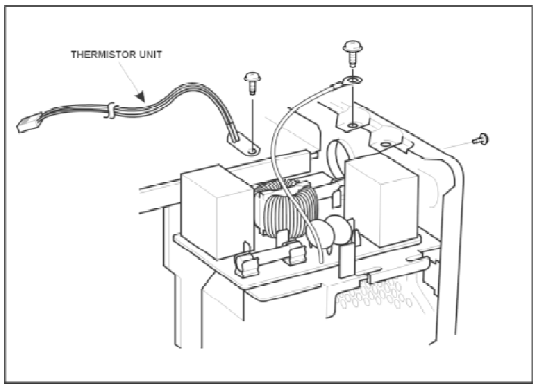
9.10. Temperature Sensor

1. Remove lead wire plug from connector CN7

2. Remove 1 screw holding temperature sensor

3. Replace temperature sensor and lead wire as a complete unit.

Figure 14



Removing the temperature sensor unit

10. Component Test Procedure

Caution

1. High voltage is present at the high voltage terminal of the inverter unit, including the aluminium heat sink.
2. It is not necessary or advisable to attempt to measure this high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

10.1. Primary Latch Switch, Secondary Latch Switch and power relay B interlocks.

1. Unplug the lead connectors to power relay B and verify the continuity of the power relay B 1-2 terminals.
2. Unplug the lead connectors to the primary latch switch and secondary latch switch.
3. Test the continuity of the switches with the door open and closed with an ohm meter on the lowest scale.
   Normal continuity readings should be as followed.

	Door Open	Door Closed
Primary Latch Switch	infinite Ω (Open)	0 Ω (Close)
Secondary Latch switch	infinite Ω (Open)	0 Ω (Close)
Power relay B	infinite Ω (Open)	infinite Ω (Close)

10.2. Short Switch and Monitor Circuit

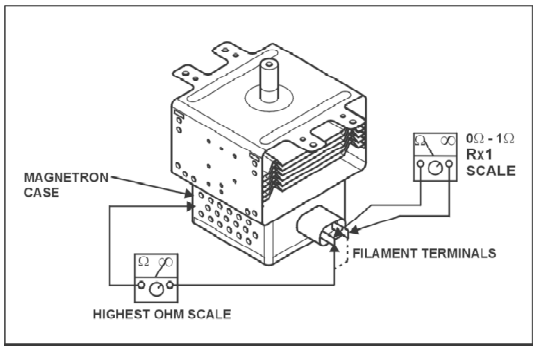
1. Unplug the lead wires from the HV inverter primary terminals.
2. Connect the test probes of the ohm meter to these leads
3. Test the continuity of the short switch with the door open and the door closed using the lowest ohm scale.

	Door Open	Door Closed
Monitor switch	0 Ω	infinte Ω

10.3. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose an open filament or shorted magnetron.

1. **Isolate the magnetron from the circuit by disconnecting the HV leads**
2. **A continuity check across the magnetron filament terminals should indicate one ohm or less**
3. **A continuity check between each filament terminal and the magnetron case should read open.**



10.4. Push Button Keyboard

Check the continuity between the switch terminals, by tapping an appropriate pad on the keyboard. The keypad matrix is shown on Key Board Matrix.

10.5. Inverter Power Supply

Caution

DO NOT try to repair this inverter power supply). Replace as a whole H.V. Inverter Unit.

Inverter Power Supply Diagram

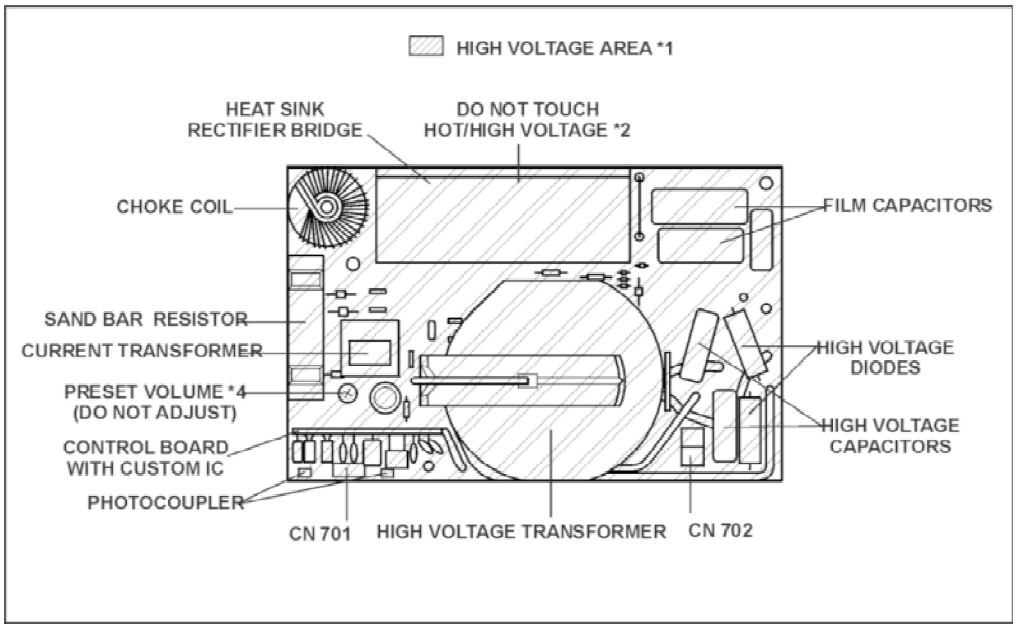


Figure 3

10.6. Inverter Power Supply Unit

Warning

Do not attempt to make any measurements in the high voltage circuitry of the inverter or magnetron.

See troubleshooting of the inverter circuit and magnetron on Figure 4 to determine if the inverter power supply is still functioning.

10.7. Temperature Sensor

A temperature sensor is mounted on the oven cavity on the right hand side. The resistance reading across the thermistor should read 300K ohm within a temperature range of 10 to 30 degrees centigrade. This would be the temperature range within a kitchen environment. If the resistance measured is outside this range the thermistor is defective and should be replaced.
NOTE: When measuring the resistance of the thermistor disconnect the connector from the digital programmer circuit.
NOTE: If the microwave oven has been operated allow to cool to room temperature before attempting to measure the thermistor resistance.

11. Measurements and Adjustments

Warning

- For continued protection against radiation hazard, replace only with identical parts.
- When the 10 amp fuse is blown due to the operation of the short switch, you must replace the primary latch switch and short switch. Then follow the installation procedures below.
- Interlock switch replacement - In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their

ability to hold the switches.

- Refer to the schematic and wiring diagram to ensure proper connection

11.1. Installation of primary latch switch, secondary latch switch and short switch.

1. When mounting the primary latch switch, secondary latch switch and short switch to the door hook assembly. Follow the instructions in figure 1.
   NOTE: No specific adjustment during the insulation of each switch into the door hook is necessary.
2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrow in figure 1. Ensuring the door does not have any play in it. Check for play by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
3. Reconnect the short switch, primary switch and secondary latch switches and check the continuity of the monitor circuit and latch switches by following the component test procedures on page.

11.2. Measurement of microwave output

The output power of the magnetron can be determined by performing the IEC standard test. However, due to the complexity of the IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary equipment:

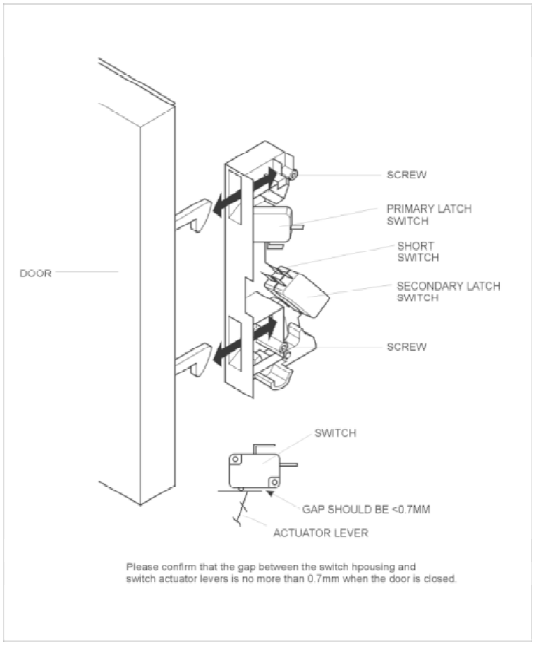
- 1 liter beaker
- Glass thermometer
- Wrist watch or stop watch

NOTE: Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurate as possible.

1. Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beakers temperature (Recorded as T1)
2. Place the beaker on the center of the glass cook plate.
3. Stir the water again and read the temperature of the beaker (Recorded as T2)

4. **The normal temperature rise at the high power position for each model is shown in the table. (Figure 2)**

Figure 1


SCREW
PRIMARY LATCH SWITCH
SHORT SWITCH
SECONDARY LATCH SWITCH
SCREW
DOOR
SWITCH
GAP SHOULD BE <0.7MM
ACTUATOR LEVER
Please confirm that the gap between the switch hpousing and switch actuator levers is no more than 0.7mm when the door is closed.

Adjustment of latch switch assembly

RATED OUTPUT	TEMPERATURE RISE
1000W	8°C

12. Troubleshooting guide

Caution

1. **Do not try to repair this H.V. Inverter power supply. Replace as a whole unit. When returning the inverter unit pack in the original inverter box.**
2. **Do not adjust the preset volume on the H.V. Inverter. It is very dangerous to repair or adjust without sufficient test equiptment, this circuit handles very high volatge and current**
3. **Ensure a good ground connection before beginning any troubleshooting**
4. **Be careful of the high voltage circuit and take necessary precautions when troubleshooting**
5. **Discharge the high voltage capacitors on the inverter.**

6. **When checking the continuity of the switches on the H.V. inverter, disconnect one lead wire from these parts and then check the continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. When disconnecting a plastic connector from a terminal, you must hold the plastic connector and not the lead wire, otherwise the lead wire may become open circuit.**
7. **Do not touch any parts of the circuitry on the digital programmer cicruit, since static electric discharge may damage this control panel.**
   Whilst working on this board ensure that that your body is connected to ground to discharge any static charge.
8. **240 VAC is present on the digital programmer circuit. (Terminals of the power relays and the primary circuit of the low voltage transformer). When troubleshooting, be cautious of possible electric shock.**

Before troubleshooting, operate the microwave oven following the correct operating procedures in the instruction manual in order to find the exact cause of any trouble, since operator error may be mistaken for the ovens malfunction.

Figure 1

	SYMPTOMS	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness. 2. Open low voltage transformer 3. Defective DPC AU or DPC DU	
2.	Oven does not accept key input (Program).	1. Key input is not in sequence. 2. Shorted push button on DPC AU. 3. Defective DPC AU.	Refer to operation procedure. Refer to DPC troubleshooting.
3.	Oven lamp and turntable motor turn on when oven is plugged in with door closed	1. Misadjustment or loose wiring of secondary latch switch. 2. Defective secondary latch switch	Adjust door and latch switches.
4.	Timer starts countdown but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches. 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to have lower output and/or be intermittent. 3. Defective high voltage component H.V. Inverter [NEW H.V.] Magnetron 4. Open or loose wiring of power relay (RY1) 5. Defective primary latch switch. 6. Defective power relay RY1 or DPC AU or DU.	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting.
5	No operation of grill or convection elements	1. Open thermal cut-out SW1 2. Defective convection or grill element 3. Defective power relay (RY5) (RY4). 4. Defective DPC	

Troubleshooting (No Operation)

Figure 2

	SYMPTOMS	CAUSE	CORRECTIONS
1.	No display and no operation at all. 10A Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switch (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective Inverter power supply (U) NEW H.V. Refer to component test procedure	Check adjustment of primary, secondary latch switch and short switch including door.
		NOTE 1: All of these switches must be replaced at the same time. (Refer to adjustment instructions.) Check continuity of power relay B's contacts (between 1 and 2) and if it has continuity, replace power relay B also.	
2	16A fuse is blown	1. Shorted lead wire harness 2. Short convection element 3. Shorted grill element	

Troubleshooting (Fuse is blown)

Figure 3

	SYMPTOMS	CAUSE	CORRECTIONS
1	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation) 3. Aging change of magnetron.	Consult electrician Refer to output test procedures by water temperature raising test.
2	Turntable on when door is opened.	1. Shorted primary latch switch.	
3	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
4	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
5	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cut-out	Adjust door and latch switches.
6	Oven returns to plug in mode 1 minute after start pad is pressed.	1. Open thermistor cicuit 2. Defective thermistor	

Troubleshooting (Other problems)

Figure 4

Troubleshooting of Inverter Circuit (U) and Magnetron NEW H.V.

Oven shuts down after approximately 15 or 33 seconds.

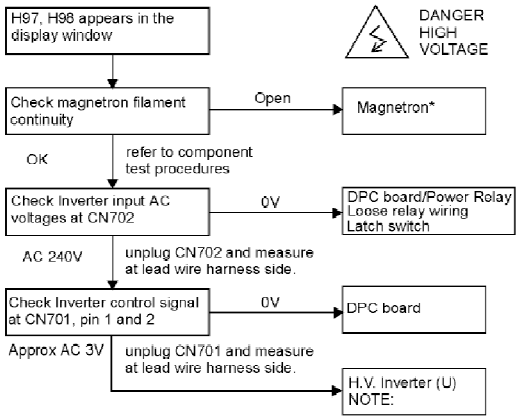
If the microwave oven shuts down after a short time in micropower mode, conduct the following test.

The microwave oven must be set in test mode to activate the self diagnostic failure code system.

SELF TEST MODE

When oven is set in test mode place water load in oven, set micropower to high and time to 1 minute, press start.

H97, H98 appears in display window a short time after start key is pressed and there is no microwave oscillation.


H97, H98 appears in the display window
DANGER HIGH VOLTAGE
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
Check Inverter input AC voltages at CN702
0V
DPC board/Power Relay Loose relay wiring Latch switch
AC 240V
unplug CN702 and measure at lead wire harness side.
Check Inverter control signal at CN701, pin 1 and 2
0V
DPC board
Approx AC 3V
unplug CN701 and measure at lead wire harness side.
H.V. Inverter (U) NOTE:

NOTE: DO NOT try to REPAIR this Inverter Power Supply(U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

*Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Troubleshooting Inverter by Input out voltage

Figure 5

Alternative way to troubleshooting oven with AC Ampare meter used. **NEW H.V.**

Oven shuts down after approximately 15 or 33 seconds.

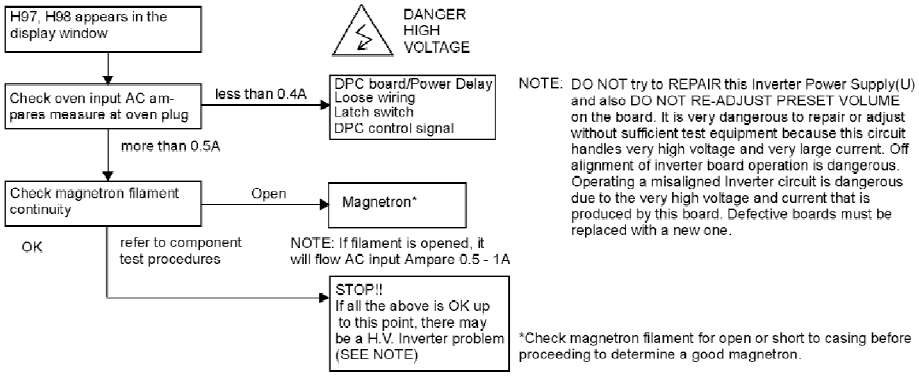
If the microwave oven shuts down after a short time in micropower mode, conduct the following test.

The microwave oven must be set in test mode to activate the self diagnostic failure code system.

SELF TEST MODE

When oven is set in test mode place water load in oven, set micropower to high and time to 1 minute, press start.

H97, H98 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampare meter used for troubleshooting.


H97, H98 appears in the display window
DANGER HIGH VOLTAGE
Check oven input AC amperes measure at oven plug
less than 0.4A
DPC board/Power Delay
Loose wiring
Latch switch
DPC control signal
more than 0.5A
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
NOTE: If filament is opened, it will flow AC input Ampare 0.5 - 1A
STOP!!
If all the above is OK up to this point, there may be a H.V. Inverter problem (SEE NOTE)
NOTE: DO NOT try to REPAIR this Inverter Power Supply(U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.
*Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Troubleshooting Inverter by Microwave Oven Input Current

13. Digital Programmer Circuit Troubleshooting Guide

Trouble Related to Digital Programmer Circuit

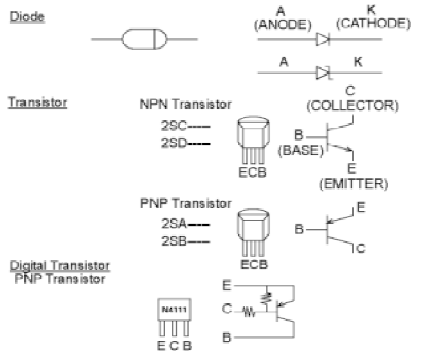
SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in.	1	Fuse pattern of DPC	Normal	STEP 2
			Open (NOTE)	Shorted Circuit of ZNR, L.V.T., Oven Lamp etc. Replace DPC
Oven is dead.	2	IC10 Pin 9 (12V line)	Abnormal 0V	IC10
			Normal 12V	→ Step 3
	3	IC-1 Pin 8 voltage (Emitter of Q10)	Abnormal	ZD10, Q10, Ribbon Cable
			Normal = 5V	→ Step 4
	4	IC-1 pin 27 voltage (15 pin of IC220)	Abnormal	IC-220
			Normal	→ IC-1, CX1

NOTE
Procedure of fuse pattern repairing is as follows:
1. When the fuse pattern (PF2) opens.
(1) Remove the jumper wire (PF3).
(2) Insert the removed jumper wire (PF3) to "(PF2)" position and solder it. If both "PF2" and "PF3" fuse patterns are open, please replace DPC.
NOTE: * At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).
If any abnormal condition is detected, replace the defective parts.

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No key input	1	Push button switch	Abnormal	Push button switch
			Normal	IC-1
No beep sound	1	IC-1 pin 12, voltage	Abnormal	IC-1
			Normal	IC220, BZ310
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped.	1	IC-1 pin 23voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	Short circuit between pin 6 and pin 16 of IC-2	Still not turn on	RY-2
			RY-2 turns on	IC-220
No microwave oscillation at any power setting.	1	IC-1 pin 18 and 16 voltages while operation at high power	Abnormal	IC-1
			Normal 7---5V, 72---5V	→ Step 2
	2	Q221 transistor	Abnormal	Q221
			Normal	IC220, Q226, RY1
No Grill Operation at any power setting.	1	IC-1 pin 18 and 15 voltages while operation at high power	Abnormal	IC-1
			Normal 7---5V, 72---5V	→ Step 2
	2	Q222 transistor	Abnormal	Q222
			Normal	IC220, Q226, RY4
No convection operation at any power setting.	1	IC-1 pin 18 and 17 voltages while operation at high power	Abnormal	IC-1
			Normal 7---5V, 72---5V	→ Step 2
	2	Q223 transistor	Abnormal	Q223
			Normal	IC220, Q226, RY5
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY
Oven shuts down on Micropower after a short time (set in test mode) (set high power 1 Min) H97/H98 appears in window and oven stops operation. Program High power for 1 minute and conduct following test quickly, unless H97/H98 appears and oven stops. NEW H.V.	1	Unplug CN702(2 pin) connector and measure voltage between terminals	0V	1. Latch switch 2. DPC/Power relay
			AC line voltage of 240V	→ Step 2
	2	Unplug CN701(3 pin) connector and measure pin 1 voltage	0V	1. DPC
			Approx. AV 3V	1. Magnetron 2. Inverter

Figure 2

How to Check the Semiconductors Using an OHM Meter



	FORWARD	REVERSE
A-K	SMALL	∞

	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

	FORWARD	REVERSE
E-B	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

	FORWARD	REVERSE
E-B	10kΩ~30kΩ	10kΩ~30kΩ
C-B	50kΩ~90kΩ	∞
C-E	40kΩ~80kΩ	∞

How to test the semiconductors

14. Main Parts List

1. Part numbers are indicated on most mechanical parts. Please use these part numbers for part orders. Do not use the description of the part.

Important safety notice

1. Components identified by! mark have special characteristics important for safety. When replacing any of these components, use only the manufacturers specified parts.

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
1	XTWANE 4 + 8BN	Screw	1	
2	E41194V00BP	Exhaust Guide D	1	
3	E6061002	Strike	1	
4	XTWANE 4+8BN	Screw	1	
5	E10584V00BP	Back Plate Cover A	1	NN-A750WB NN-A720MB
5	E10584V00SBP	Back Plate Cover A	1	NN-A770SB
6	E41074V00BP	Exhaust Guide B	1	
7	ANE0964000BK	Cushion Rubber	1	
8	E61454V00BP	Thermal Cut-Out	1	
9	XTWANE 4+8BN	Screws	3	
10	E66804V00BP	Heater Cover B	1	
11	E22424V00BP	Adiabatic Material A	1	
12	E490S4V00BP	Circulation Fan Motor	1	
13	E41804V00BP	Motor Bracket	1	
14	XTBANE 4+8BN	Screws	3	
15	E41594V00BP	Cooling Fan	1	
16	E41614V00BP	Fan Spacer A	1	
17	XTWANE 4+8BN	Screws	3	
18	XTBANE 4 + 8BN	Screws	2	
19	E66794V00BP	Heater Cover A	1	
20	E630H4V00BP	Heater Unit	1	
21	E22394V00BP	Circulation Fan	1	
22	E41634V00BP	Fan Spacer C	1	
23	XNG4EVSL	Nut	1	
24	E64174V00BP	Heater Bracket A	1	
25	XTWANE 4 + 8BN	Screw	1	
26	E00064080BP	Warning Label	1	
27	E10594V00BP	Back Plate Cover B	1	
28	XTWANE 4+8BN	Screws	2	
29	E22594V00BP	Adiabatic Material D	1	
30	E030A4V00BP	Lead Wire Harness	1	
31	E67597550GP	10A Fuse	1	
32	AEE6230P10GN	16A Fuse	1	
33	E607X4N30BP	Noise Filter	1	
34	E400A4760JP	Fan Motor	1	
35	E41444N30BP	Upper Orifice	1	
36	E42094N30BP	Lower Orifice	1	
37	E4008-1640	Fan Blade	1	
38	E09020000AF	Cushion Rubber	1	

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
39	E09020000AA	Cushion Rubber	1	
40	E20994N30BP	Reinforcement Bracket A	1	
41	E40474N30BP	Air Guide A	1	
42	E610T6700BP	Lamp Assembly	1	
43	E22364V00BP	Right Hand Heater Panel	1	
44	XTW4 +12T	Screw	1	
45	E31374830AP	Hook Spacer B	1	
46	E31384830AP	Hook Spacer C	1	
47	E61425180AP	Secondary Latch Switch	1	L-3C2-2
48	E61785180AP	Short Switch	1	L-2C2-2
49	AEE6142-1450	Primary Latch Switch	1	V-16G-3C26-M
50	E30208000BP	Door Hook	1	
51	AEE9108820GN	Holder	1	
52	XTWANE 4+ 12B	Screws	4	For Magnetron
53	2M236-M42G	Magnetron	1	
54	E22434V00BP	Adiabatic Material	1	
55	XTWANE 4 + 8BN	Screw	1	
56	AEE0926000AN	Cushion Rubber	1	
57	E66014V00BP	Inverter Earth Bracket	1	
58	E65854V00BP	Inverter Support Bracket	1	
59	E606Y4V00GP	Inverter	1	
60	E09250000BD	Cushion Rubber	1	
61	E40474V00BP	Air Guide E	1	
62	E09020000AL	Cushion Rubber	1	
63	E10014N30BP	Base Plate	1	
64	E09270000AH	Cushion Rubber	1	
65	E09270000AM	Cushion Rubber	1	
66	E1008-1180	Rubber Foot	4	
67	E09270000AM	Cushion Rubber	1	
68	XTWA 4+12CF	Screws	6	
69	E110D4V00HBP	Outer Panel	1	NN-A750WB
69	E110D4V00NBP	Outer panel		NN-A720MB
69	E110D4V00SBP	Outer Panel		NN-A770SB
70	XTW 3+6B	Screws	2	
71	E63268960JP	Turntable Motor	1	
72	E01507550BP	Outer Panel Warning Label	1	NN-A750WB
72	E01504V00SBP	Outer Panel Warning Label	1	NN-A770SB
72	E01507560BP	Outer Panel Warning Label	1	NN-A720MB NN-A770SB
73	XTWA 4 + 12CF	Screw	1	
74	XTWA 4 + 12DF	Screw	1	
75	E30074L00GS	Lower Hinge	1	
76	E21778000BP	Pulley Shaft Washer	1	
77	E21315870GP	Pulley Shaft	1	
78	XST4 + W5V	Screw	1	
79	E20554L00GS	Cover A	1	
80	E30064N30BP	Upper Hinge	1	
81	XTWA 4+12CF	Screws	2	
82	E200A4V00BP	Oven cavity	1	
83	E64604N30BP	Heater Support Bracket	1	
84	E64604N30BP	Heater Support Bracket	1	
85	E03594N30GP	Lead Wire Grill Link	1	
86	XTWANE4 + 8BN	Screw	1	
87	E630G8000BP	Quartz Heater	2	

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
88	E40244V00BP	Exhaust Guide A	1	
89	XTWANE 4+8BN	Screw	1	
90	E09230000AL	Cushion Rubber	1	
91	XTWANE 4+8BN	Screw	1	
92	E605A-1960	Temperature Sensor	1	
93	E900C6520BP	Power cord	1	
94	E030E4N30BP	H.V Lead Wire	1	
95	E90314V00BP	Holder	1	
96	E90314VOOBP	Holder	1	
97	E67579000BP	Heater bracket D	1	
98	E203B4V00SBP	Heater Cover	1	NN-A770SB
99	E01504V00SBP	Warning label	1	NN-A770SB

15. Exploded View

16. Door Assembly

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
D1	E302A4V00SBP	Door A Assembly	1	NN-A770SB
D2	E30014V00HBP	Door A	1	NN-A750WB
D2	E30014V00NBP	Door A	1	NN-A720WB
D3	E30214000AP	Door Key Spring	1	
D4	E30184L00GS	Door Key	1	
D5	E31464V00BP	Door Screen B	1	
D6	E302K4V00BP	Door E	1	
D7	E30854V00BP	Door Screen C	1	

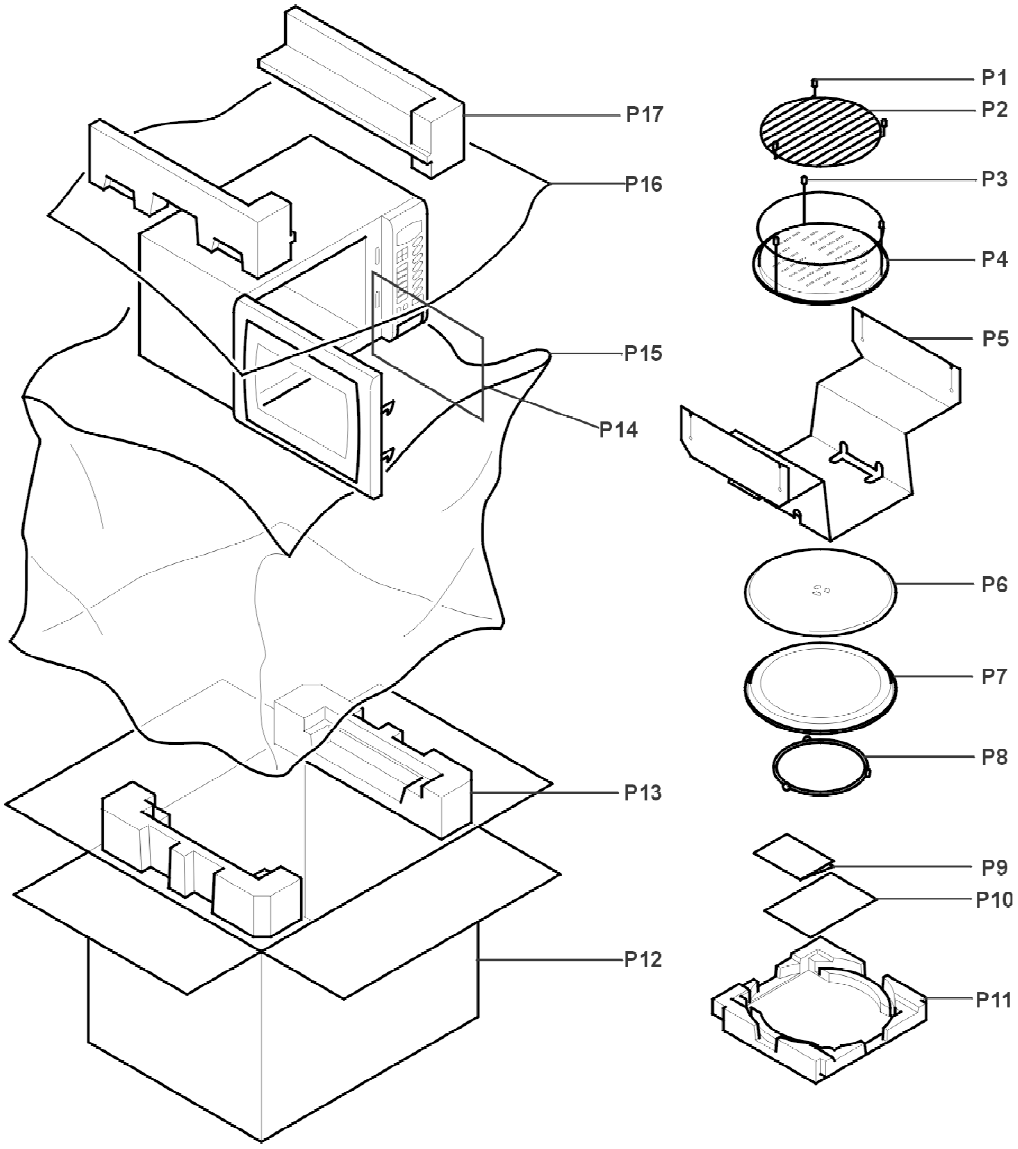
NOTE: When ordering any Door component also order door C as this part may become damaged during disassembly.

17. Escutcheon Base

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
E1	E800S4V00SBP	Escutcheon Assembly	1	! NN-A770SB
E2	E80074L00SGS	Spring	1	NN-A770SB
E3	E80724L10HBP	Door opening button	1	NN-A750WB
E3	E80724L10NBP	Door opening button	1	NN-A720MB
E3	E80724V00SBP	Door opening button	1	NN-A770SB
E4	E80378A0AG	Door button spring	1	NN-A770SB
E5	E83374V00HBP	Escutcheon sheet	1	NN-A750WB
E5	E83374V00NBP	Escutcheon sheet	1	NN-A720MB
E6	E80344L10HBP	Escutcheon Base	1	NN-A750WB
E6	E80344L10NBP	Escutcheon Base	1	NN-A720MB
E7	E90014N30BP	Earth Strip	1	NN-A720MB
E8	E81274L10BP	Back plate	1	NN-A750WB NN-A720MB
E8	E81274V00SBP	Back plate	1	NN-A770SB
E9	E603L4V00BP	DPC AU	1	!
E10	E66164L00GS	Ribbon cable	1	
E11	E82564L10BP	Door opening lever	1	NN-A750WB NN-A720MB
E11	E82564V00SBP	Door opening lever	1	NN-A770SB
E12	E603Y4V00BP	DPC DU	1	!
E13	E607044V00SBP	Insulation sheet	1	NN-A770SB
E14	E83264V20BP	Display sheet	1	
E15	E00074V00BP	Name plate	1	

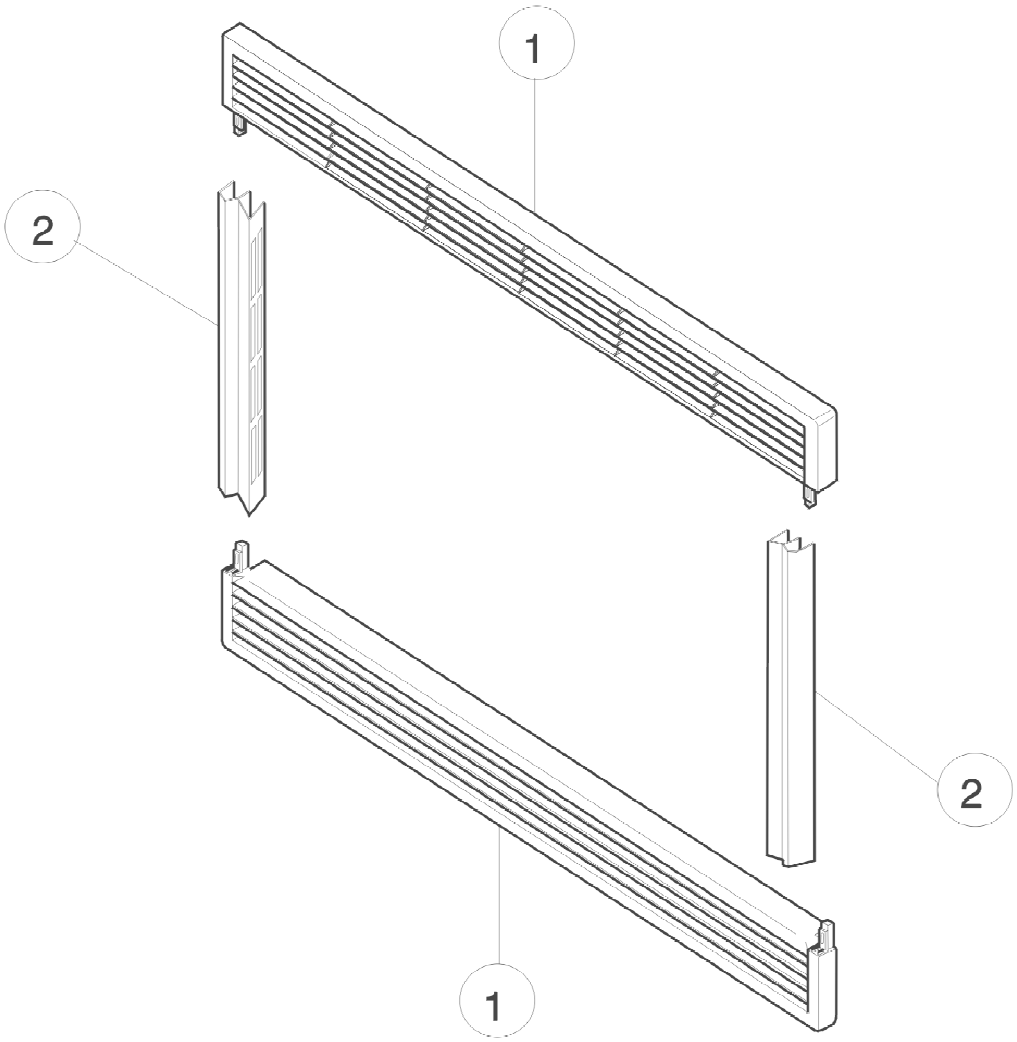
NOTE: Please order the escutcheon base and name plate together
NOTE: When replacing the silver escutcheon sheet ensure it is earthed to the escutcheon back plate via the earth strip
NOTE: When replacing the stainless escutcheon assembly, be sure that the fascia is earthed to the back plate via the earth spring.

18. Packing And Accessories


P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
P15
P16
P17

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
P1	E06435870GS	Rubber foot	3	RED
P2	E060V8020BP	Wire rack low	1	
P3	E06435870SP	Rubber foot	3	BLACK
P4	E060V6520BP	Wire rack high	1	
P5	E01084V00BP	Tray packing	1	
P6	E06014N30BP	Glass tray	1	
P7	E06015020GP	Enamel tray	1	
P8	E290D4N00BP	Roller ring	1	
P9	E01695750BP	Service center list	1	
P10	E00034V00BP	Operating instructions and cook book	1	
P11	E01134N30BP	Tray styrol	1	
P12	E01024V00HBP	Carton box	1	NN-A750WB
P12	E01024V00NBP	Carton box	1	NN-A720MB
P12	E01024V00SBP	Carton box	1	NN-A770SB
P13	E01054V00BP	Lower filler	1	
P14	E01076700BP	Door sheet	1	
P15	E01066750BP	Vinyl Cover	1	
P16	E01926430GP	Protector sheet	1	NN-A720MB
P17	E01044V00BP	Upper filler	1	

19. Trim Kit Accessories

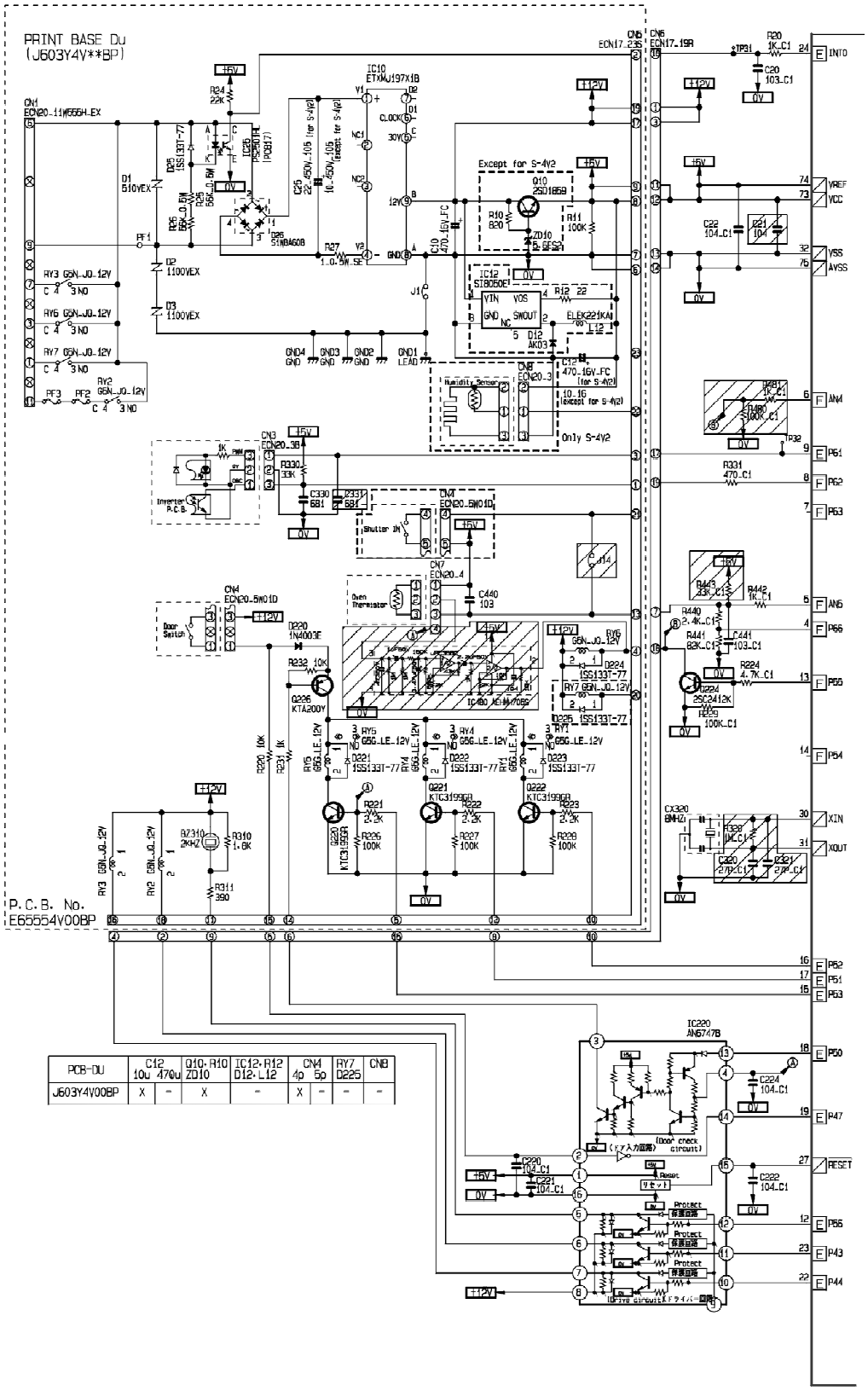


Trim Model No.	Top and Bottom Strip REF NO. 1	Set	Side Strip REF NO 2.	Set	Microwave Ovcen Model No.
NN-TKA70	E1603A510HBP	1	E1601A510HBP		NN-A750WB
	E1603A510HBP		E1601A510HBP		
NN-TKA70	E1603A510NBP	1	E1601A510NBP		NN-A720MB
INSTALLATION GUIDE			E000QA820BP		

20. Noise filter component parts

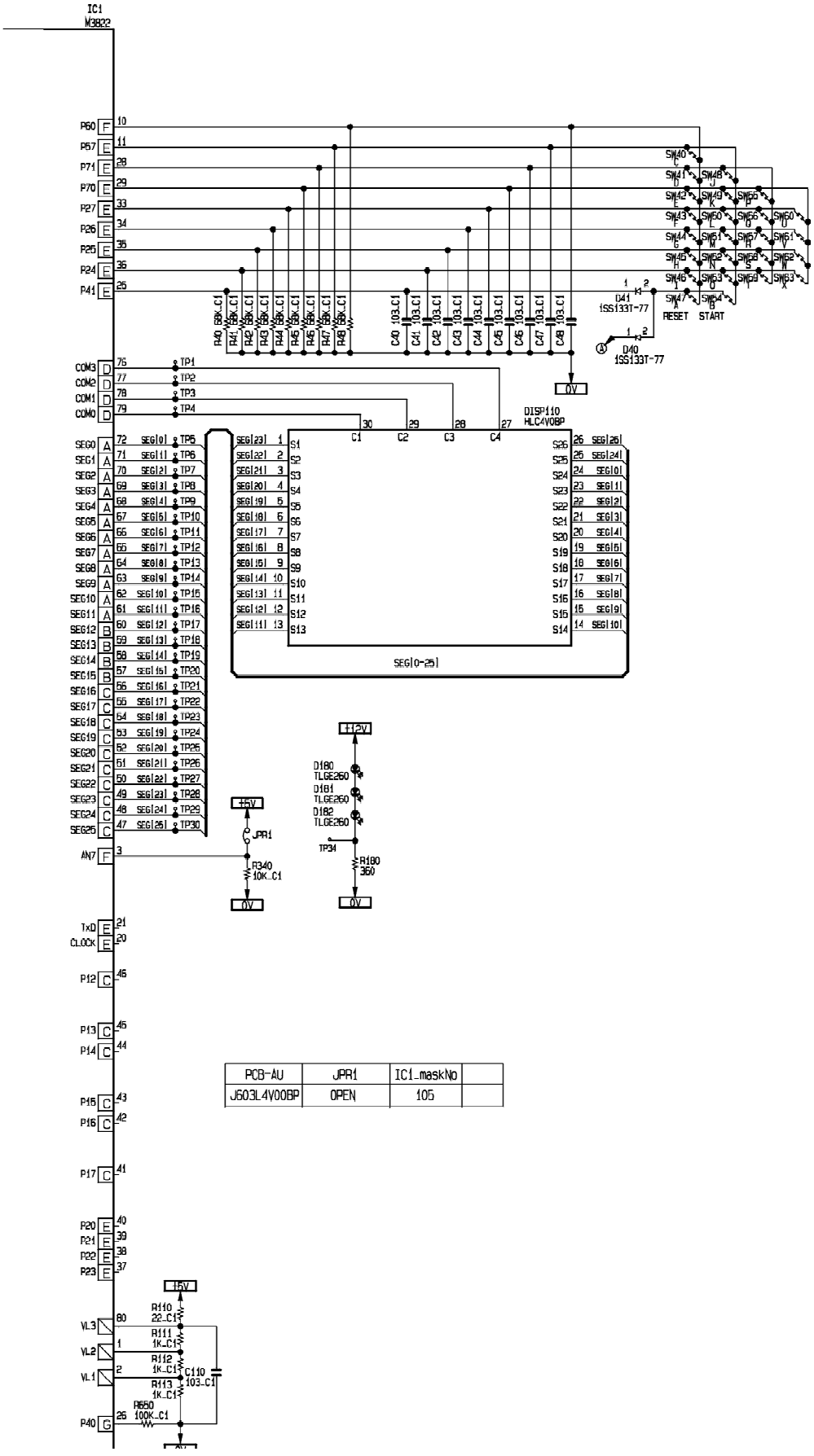
Ref. No.	Part No.	Part Name & Description	Qty	Remarks
R1	ERG1SJ753P	Resistor	1	75KW W
C1 & C2	QETJ5225KRP2CE	Capacitor	2	2.2mF
C3 & C4	ECKMNA472ME	Capacitor	2	4700pF 250V AC
L1	SC-08-E203A	Inductor	1	2.4mH
F1	E62316010BP	Fuse Holder	2	

21. Digital programmer Circuit

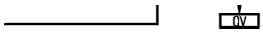


PCB-Du	C12 10u	C12 470u	Q10·R10 ZD10	IC12·R12 D12·L12	CN4 4p	CN4 5p	RY7 D225	CN8
J603Y4V00BP	X	-	X	-	X	-	-	-

DPC Schematic 1

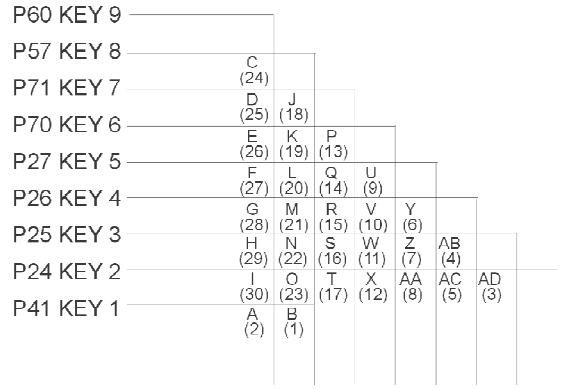


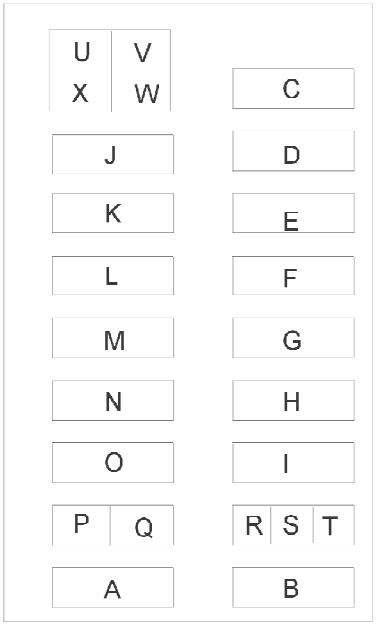
PCB-AU	JPR1	IC1_maskNo	
J603L4V00BP	OPEN	105	



DPC Schematic 2

22. Key Board Matrix





B(1)	START
A(2)	RESET
AA(3)	
AB(4)	
AC(5)	
Y(6)	
Z(7)	
AD(8)	
U(9)	1HOUR
V(10)	10 MIN
W(11)	10 SEC
X(12)	1 MIN
P(13)	STAND
Q(14)	CLOCK
R(15)	LB/OZ
S(16)	UP
T(17)	DOWN
J(18)	POWER
K(19)	GRILL
L(20)	CONVECTION
M(21)	GRILL
N(22)	COMBINATION
O(23)	AUTO(W.DEF)
C(24)	AUTO
D(25)	AUTO
E(26)	AUTO
F(27)	AUTO
G(28)	AUTO
H(29)	AUTO
I(30)	AUTO

23. Digital programmer circuit parts list

23.1. E603L4L00BP DPC AU

Ref. No.	Part Name	Description	Qty	Remarks
R180	ERDS2TJ361T	Carbon Resistor	1	360R
D40,D41	AESS133T-77	Diode	2	
D180-D182	AESQTLGE260T	Green LED	3	
CX320	EFOMC8004T4	Ceramic Resonator	1	
SW40-SW63	EVQ11L05R	Push Switch	24	
C110 C20 C40 -C48 C441	AECU1F103Z50	Chip Capacitor	12	10nF
C220 C221 C222 C224 C22	AECU1F104Z25	Chip Capacitor	5	100nF
R111-113 R20 R442	AERJ3GSYJ102	Chip Resistor	5	1K
R340	AERJ3GSYJ103	Chip Resistor	1	10K
R650 R229	AERJ3GSYJ104	Chip Resistor	2	100K
R110	AERJ3GSYJ220	Chip Resistor	1	22R
R440	AERJ3EKF2401	Chip Resistor 1%	1	2.4K
R331	AERJ3GSYJ471	Chip Resistor	1	470R
R224	AERJ3GSYJ472	Chip Resistor	1	4.7K
R40-R48	AERJ3GSYJ683	Chip Resistor	9	68K
R441	AERJ3EKF8202	Chip Resistor 1%	1	82K
Q224	2SC2412KT146	NPN Transistor	1	
IC1	AEIC8224H105	LSI M3822 (24K)	1	!
DISP110	AEDDHL4V00BP	LCD (NEW)	1	
CN6	AEEM19FESVKN	CONNECTOR	1	
IC220	AN6747B	Custom IC	1	

23.2. E603Y4V00BP DPC DU

Ref. No.	Part No.	Description	Qty	Remarks
ZD10	AESZMTZ5R6B	Zener Diode	1	
D221-D224	AESS133T-77	Silicon Diode	4	
D25	AESS133T-77	Silicon Diode	1	
D220	AESS1N4003E	Silicon Diode	1	
C330	ECBT1H681KB5	Capacitor	1	680PF
C440	ECBT1E103ZF5	Capacitor	1	10nF
R25,R26	ERDS1FJ563T	Resistor	2	56K 1/2 Watt
R220 R232	ERDS2TJ103T	Resistor	2	10K
R11 R226-R228	ERDS2TJ104T	Resistor	4	100K
R231	ERDS2TJ102T	Resistor	1	1.0K
R221-R223	ERDS2TJ222T	Resistor	3	2.2K
R24	ERDS2TJ223T	Resistor	1	22K
R330	ERDS2TJ333T	Carbon Resistor	1	33K
R311	ERDS2TJ391T	Resistor	1	390
R10	ERDS2TJ821T	Resistor	1	820
R310	ERSD2TJ182T	Resistor	1	1.8K
Q10	2SD1859TV2	Transistor	1	
Q226	AESAKTA200Y	PNP Transistor	1	
Q220-Q222	AESCKTC3199GR	NPN Transistor	3	
C10	EEUFC1C471B	Elect Capa	1	470uF 16 V
C12	ECEA1CKA100B	Electrolytic Capacitor	1	10uF 16V
R27	ERX12SJ1R0E	Watt Resistor	1	1R 1/2 Watt
CN3	AEEMXF00703B	3 Pin Connector (Inverter)	1	
CN7	AEEMMF00703R	3 Pin Connector (OvenThermistor)	1	

Ref. No.	Part No.	Description	Qty	Remarks
CN4	AEEMXF00D04W	4 Pin Connector	1	
C25(COVER)	A6219-1850	Capacitor Cover (small)	1	
RY2 RY3 RY6	AEBGG5N1A12	12 V Relay	3	
RY1 RY4 RY5	AEGG5G1A12	12 V Relay	3	
CN5	AEEM19FEBVKN	19 Pin Connector	1	
CN1	AEEMXD55511W	11 Pin Connector	1	
IC25	AEICP25011HL	Photocoupler IC	1	
D26	AESTS1WBA60B	Diode Bridge (600V)	1	
C25	ECA2WHG100E	Electrolytic Capacitor	1	10uF 450V
BZ310	EFBAH20C001	2KHz Buzzer	1	
D2,D3	ERZV10D112C1	Varistor	2	1100V
D1	ERZV10D511CS	Varistor	1	510V
IC10	ETXMJ197X1BG	Switching Power Supply	1	

S-4V00BP / / / / SM

Order Number MOP00080014C2

Service Manual

Microwave Oven

INVERTER SYSTEM INSIDE

NN-A750WB / NN-A720MB / NN-A770SB

27L

WHITE SILVER STAINLESS

United Kingdom

SPECIFICATIONS

	Specification
Power Source	240VAC Single phase, 50Hz
Power Requirements	Micro 1260W Grill 1360W Conv 1470w Combi 2770W
Output (IEC705-88)	Micro 1000W Grill 1300W Conv 1400W
Microwave Frequency	2450MHz
Timer	99 Minutes 99 Seconds
Oven Cavity Size	27L
Outside Dimensions	510mm(W) x 477mm(D) x 314mm(H)
Inside Dimensions	359mm(W) x 352mm(D) x 217mm(H)
Weight	15Kg

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

1. Inverter Warning

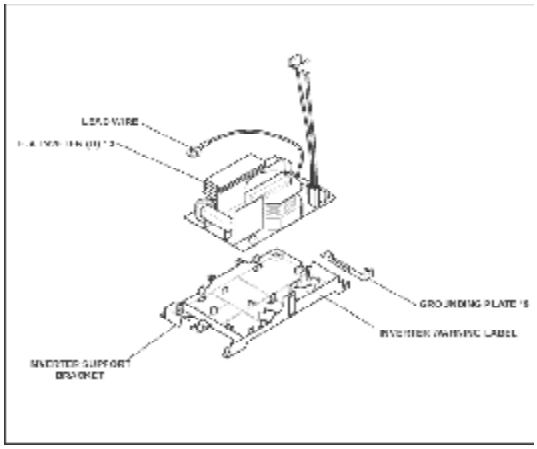
The inverter board looks like a regular PCB, however, this PCB drives the magnetron tube using very high voltages and current.
It has

1. **Very high voltage and high current**
2. **An Aluminium heat sink that becomes very hot**
3. **The capacitors on the inverter circuit will contain a high voltage charge even when the oven is not operating.**

Do not

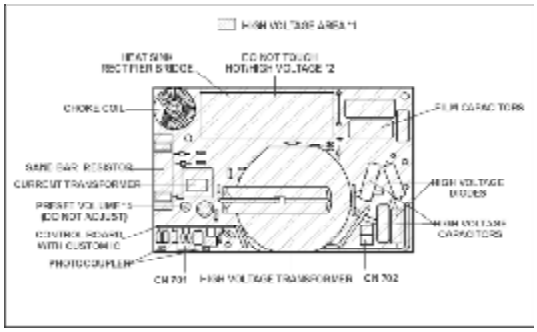
1. **Do not touch the circuitry as it contains very high voltages. When replacing the board please take extreme care to avoid possible electric shock. High voltages may remain in the circuit.**
2. **Do not touch the aluminium heat sink as it will become very hot. It also contains high voltages.**
3. **Do not attempt to repair the inverter PCB as this can be very dangerous. Replace the high voltage inverter circuit as a complete unit. Return the old unit fully repacked in the original shipping box and completed paper work.**
4. **Do not adjust or tamper with the preset volume on the inverter board. It is very dangerous to adjust this preset without proper test equipment.**
5. **Do not test the oven while the inverter grounding strip or screws are loose. It is very dangerous to operate the inverter circuit board with out a proper ground connection.**

Figure 1



Inverter Power Supply Diagram

Figure 2



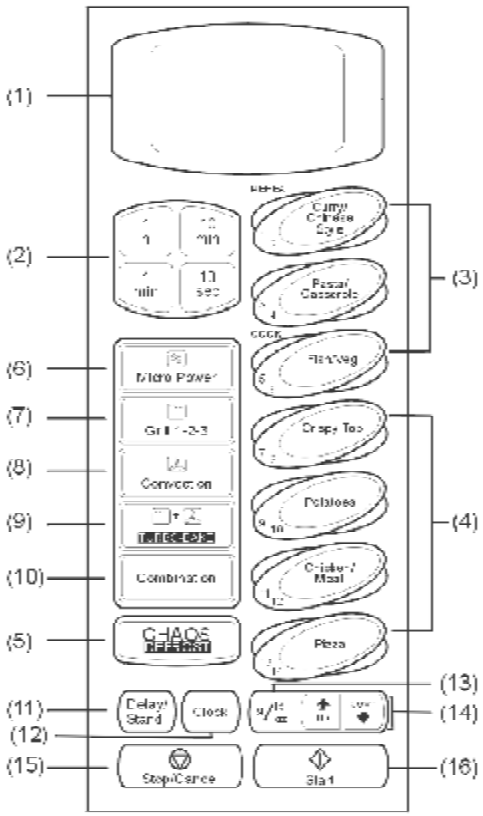
Inverter Layout

2. Feature Chart

Function	
Microwave	6
Grill	3
Convection	17
Combination	YES
Weight Defrost	3
Weight Combination	8
Weight Reheat	4
Weight Cook	2
Stage Cooking	3 Stage
Delay / Stand	Yes
Kg lb./oz.	Yes
Clock	12 Hour
Word Prompt	English

3. Control Panels

NN-A750/A720/A770*



The design of your control panel may vary from the panel displayed (depending on color), but the words on the pad will stay the same.

(1) **Display Window**
(2) **Time Pads**
(3) **Auto Weight Microwave Programs**
(4) **Auto Weight Combination Programs**
(5) **Auto Weight Defrost Programs**
(6) **Microwave Power Setting**
(7) **Grill Setting**
(8) **Convection Setting**
(9) **TURBO-BAKE pad**
(10) **Combination Pad**
(11) **Delay/Stand Pad**
This can be used to delay a Cooking program for up to 9 hrs 99 Minutes, or used to set a standing time.
(12) **Clock Pad**
(13) **lb/oz Conversion Pad**
(14) **Weight Selection Pads**
(15) **Stop Cancel Pad:**

Before Cooking
One press clears your instructions

During Cooking
One press temporarily stops the cooking program.
Another press cancels all your instructions and the time of the day will appear in the display

(16) **Start Pad**
Press to start operating the oven
If during cooking the door is opened or the stop cancel pad is pressed once, the start pad has to be pressed once to continue cooking.

Beep Sound
A beep sounds when a pad is pressed. If this beep does not sound, the setting is incorrect. When the oven changes from one function to another, two beeps sound. After completion of cooking, five beeps sound

4. Operation And Digital Programmer Circuit Test Procedure

4.1. Setting The Clock

1. Plug the power supply cord into the wall outlet

WELCOME TO PANASONIC REFER TO OPERATING INSTRUCTIONS

2. Press the clock pad

SET TIME

3. Enter the time of the day

11:25
__ PRESS CLOCK

4. Press the clock pad

11 : 25

4.2. Microwave Cooking

1. Place a water load in the oven

2. Press Micro power once to set high power

HIGH

__ SET TIME

3. Set time at 5 sec. by pressing
1 sec. pad 5 times

HIGH

10
sec

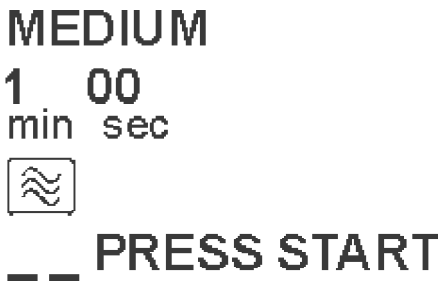
__ PRESS START

4. Press Micro power pad 3 times to set medium power

MEDIUM

__ SET TIME

5. Set pad for 1 minute by pressing 1 min. pad once



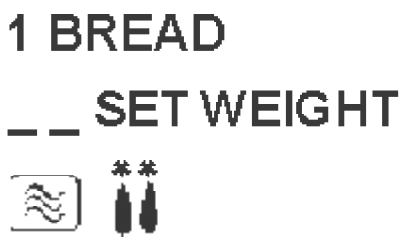
6. Press the start pad

7. When the first stage cooking has elapsed oven automatically switches to second stage

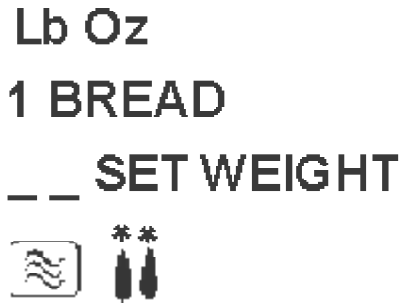
8. When second stage cooking has elapsed oven bleeps 5 times and shuts off

4.3. Auto Weight Defrost

1. Select the desired program



2. Press g or lb. and oz.



3. Enter the weight by pressing the Up & Down Pads.

4. Press Start

4.4. Delay Stand

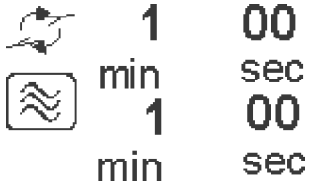
1. Set power level and time

-

2. Press Stand

3. Set standing time

4. Press Start



4.5. Delay Start

1. Press delay

2. Set delay time

3. Set power level and time

-

4. Press start pad

4.6. Grill Operation

1. Select grill power press once for grill 1

2. Set cooking time

3. Press start

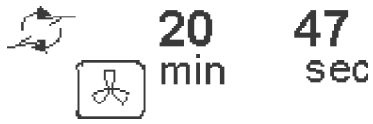
4.7. Convection Operation

1. Press convection pad to select oven temperature

2. Press start to preheat

3. Press time pads to enter cooking time

4. Press start pad



4.8. Turbo Bake Operation

1. Press turbo bake pad to select oven temperature

2. Press grill pad to select grill power

3. Press start to preheat

4. Press time pads to enter cooking time

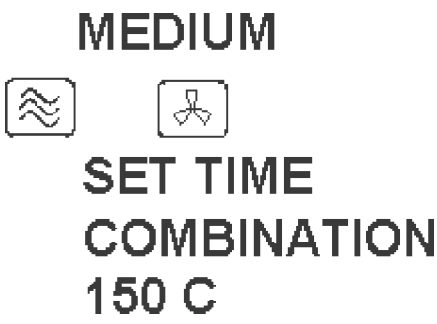
5. Press start

4.9. Combination Cooking (Convection And Microwave)

1. Press combination pad

2. Press convection pad to select oven temperature

3. Select micro power



4. Press start if preheating

5. Set cooking time

6. Press start pad

4.10. Combination Cooking (Grill And Microwave)

1. Press combination pad

COMBINATION CHOOSE FIRST COOKING MODE

2. Press grill pad to select oven temperature

GRILL 1

SELECT MICROPOWER
COMBINATION

3. Select micro power

MEDIUM

SET TIME
COMBINATION
GRILL1

4. Set cooking time

H 10

PRESS START
COMBINATION
GRILL1
MEDIUM

5. Press start pad

9 59
min sec

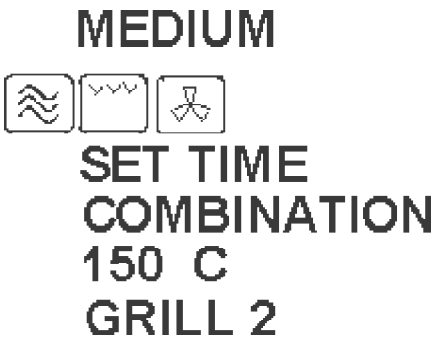
4.11. Combination Cooking (Turbo Bake And Microwave)

1. Press combination pad

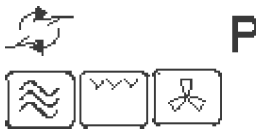
COMBINATION CHOOSE FIRST COOKING MODE

2. Press convection pad to select oven temperature

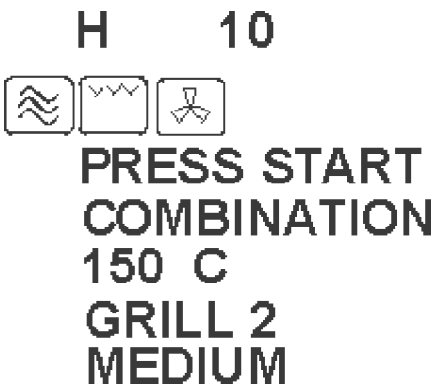
3. Select micro power



4. Press start if preheating



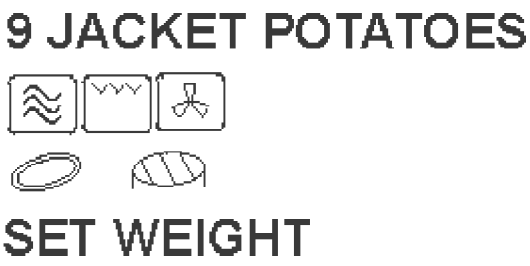
5. Set cooking time



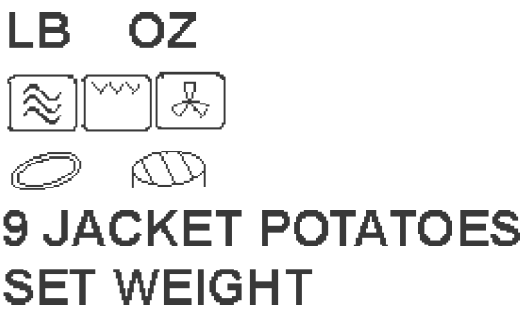
6. Press start pad

4.12. Auto Weight Cook Programs

1. Select the desired auto weight cook program



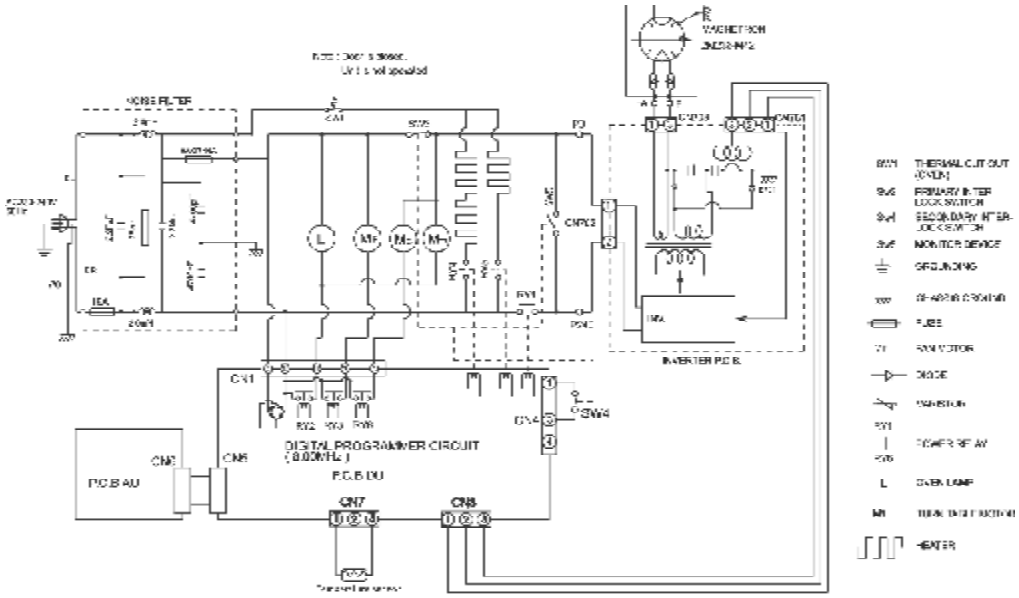
2. Press to select grams or pounds and ounces



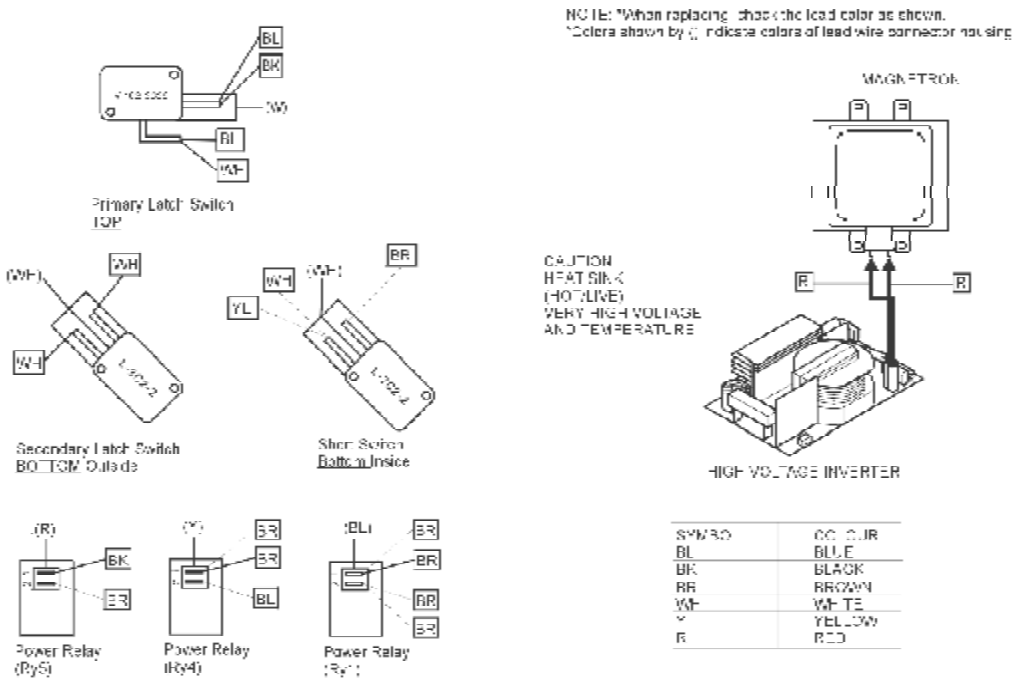
3. Enter the weight by pressing the up and down pads

4. Press Start

5. Schematic Diagram



6. Wiring Diagram



7. Description of Operating instruction

7.1. Variable power cooking control

The HIGH VOLTAGE INVERTER POWER SUPPLY controls the output power by a signal from the digital Programmer circuit DPC. The power relay (RY1) turns on to supply power to the inverter circuit. The level of output power is controlled by the drive signal level form the inverter circuit.

NOTE1: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating the magnetron filament. / NOTE: 2 If microwave cooking is over 8 minutes on HIGH power, the fan motor rotates for 1 minute after

cooking to cool the oven and electrical components.

Duty cycles for microwave cooking

	Output	Duty ON/OFF	
		ON time	OFF time
High	1000W	22”	0”
Defrost	440W	16”	6”
Medium	600W	22”	0”
Low	440W	22”	0”
Simmer	440W	15”	7”
Warm	440W	8”	14”

7.2. Grill Cooking

The digital programmer circuit controls the grill power by operating the power relay RY4 in the sequence shown in the table below

Duty cycles for Grill Cooking

	Duty ON/OFF	
	ON Time	OFF Time
Grill 1	33”	0”
Grill 2	24”	9”
Grill 3	18”	15”

7.3. Auto weight defrost, Auto weight Cook

When an auto control feature is selected and the start pad pressed:

1. The digital programmer circuit determines the power level and the cooking time and indicates the operating state in the display. The table shows the corresponding cooking times for each category and its respective weight.
2. When the cooking time in the display window has elapsed, the oven turns off automatically via the control signal from the digital programmer circuit.
   Note: After auto cooking if the oven temperature is over the predetermined temperature the fan motor rotates to cool the oven and its components.

Auto Weight Defrost

Category	1st Touch Weight	Cooking Time
Bread	100g	45s
Meat Items	200g	2m 10s
Meat Joints	400g	6m 20s

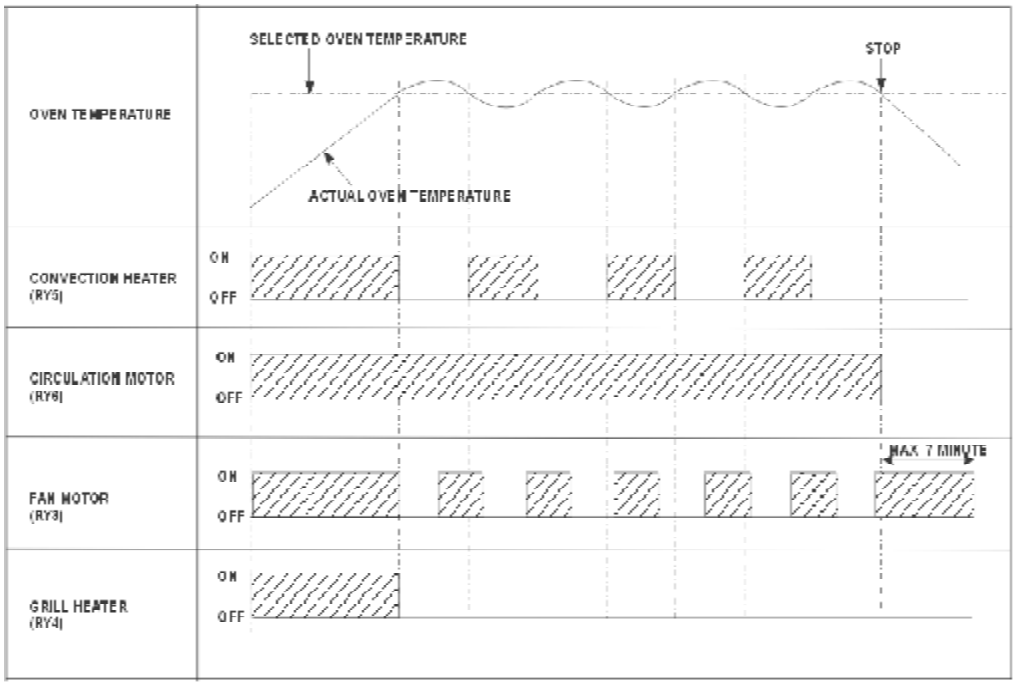
Auto weight Cook

Category	1st Touch Weight	Cooking Time
1.Curry	300g	3m 30s
2.Chinese Style	200g	2m 10s
3.Pasta	250g	2m 55s
4.Casserole	300g	3m 15s
5.Fresh Fish	100g	1m 30s
6.Fresh Vegetables	100g	2m 20s
7.Chilled Crispy Top	300g	8m
8.Frozen Crispy Top	300g	12m
9.Jacket Potatoes	200g	9m
10.Frozen Potato Products	200g	8m
11.Whole Chicken	1000g	19m 20s
12.Lamb/Beef	500g	14m 40s
13.Chilled Pizza	200g	6m 40s
14.Frozen Pizza	200g	9m

7.4. Convection Cooking

1. The digital programmer circuit operates the power relays RY3,RY5 and RY6 in the sequence as shown in the figure below.
2. When the oven reaches a predetermined temperature the digital programmer circuit stops supplying power to relay RY5, resulting in the convection heater turning off.
3. When the temperature drops below the predetermined temperature, the digital programmer circuit supplies power to power relay RY5 resulting in the convection heater turning on. Note: After the convection process, if the oven temperature is higher than the predetermined temperature, the fan motor rotates to cool the electronic components and the oven.

Figure1



Convection Cooking Duty Cycles

7.5. Combination Cooking

Combination cooking is achieved by operating the microwave and heater modes together during one cooking cycle. There are three combination modes.

1. Combination (convection and microwave)

2. Combination (grill and microwave)

3. Combination (grill, convection and microwave)

The digital programmer circuit operators the power relays as shown in the figures below.
When the oven temperature reaches the predetermined temperature, the digital programmer circuit stops supplying power to relay (RY5) resulting in the convection heater turning off.
During this time the digital programmer circuit continues to operate relay (RY1) so that microwave activity continues at the duty cycle selected. The inverter control signal level is also maintained. The microwave activity continues to cycle until the entire cooking program is completed.
When the oven temperature drops below the selected temperature, the digital programmer circuit operates power relay (RY5) switching on the heater elements.
In the case of grill combination the sequence applies with the digital programmer circuit switching power relay (RY4) to control, the grill elements.
With convection, grill and micro power combination. The grill elements and convection elements are operated alternatively whilst the oven temperature is above the selected level.

Convection And Microwave Combination Duty Cycles

Convection Heater	Micropower			
100 - 250 C		OUTPUT	ON	OFF
	Medium	600W	22	0
	Low	440W	22	0
	Simmer	440W	14	8
	Warm	440W	7	15

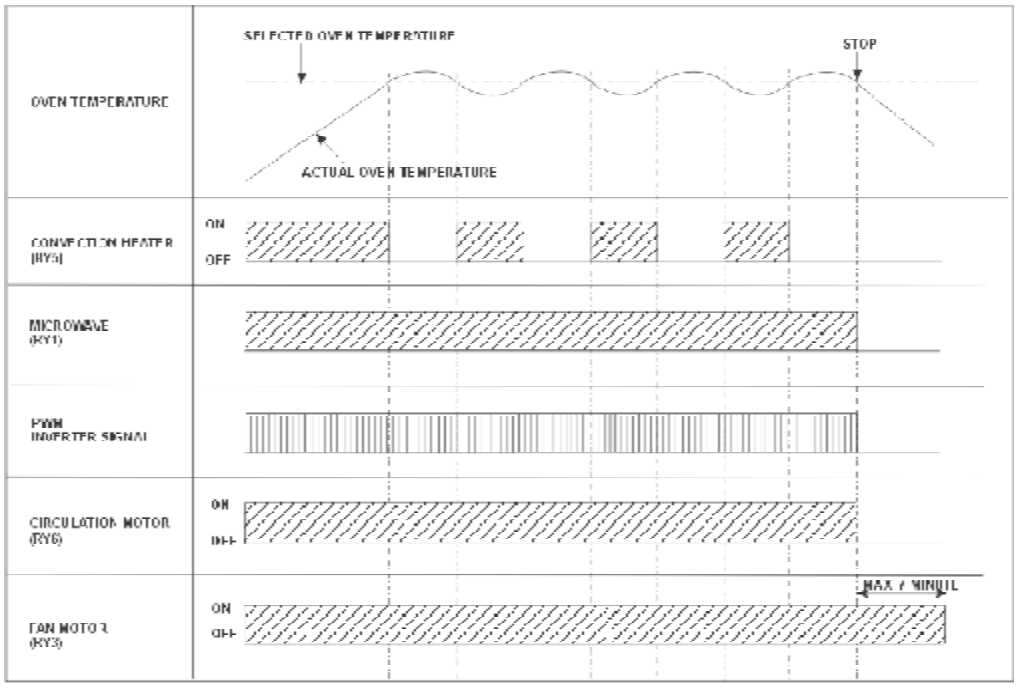
Grill And Microwave Combination Duty Cycles

Grill Heater			Micropower			
	ON	OFF		OUTPUT	ON	OFF
Grill 1	66	0	Medium	600W	22	0
Grill 2	48	18	Low	440W	22	0
Grill 3	36	30	Simmer	440W	14	8
			Warm	440W	7	15

Grill Convection And Microwave Combination Duty Cycles

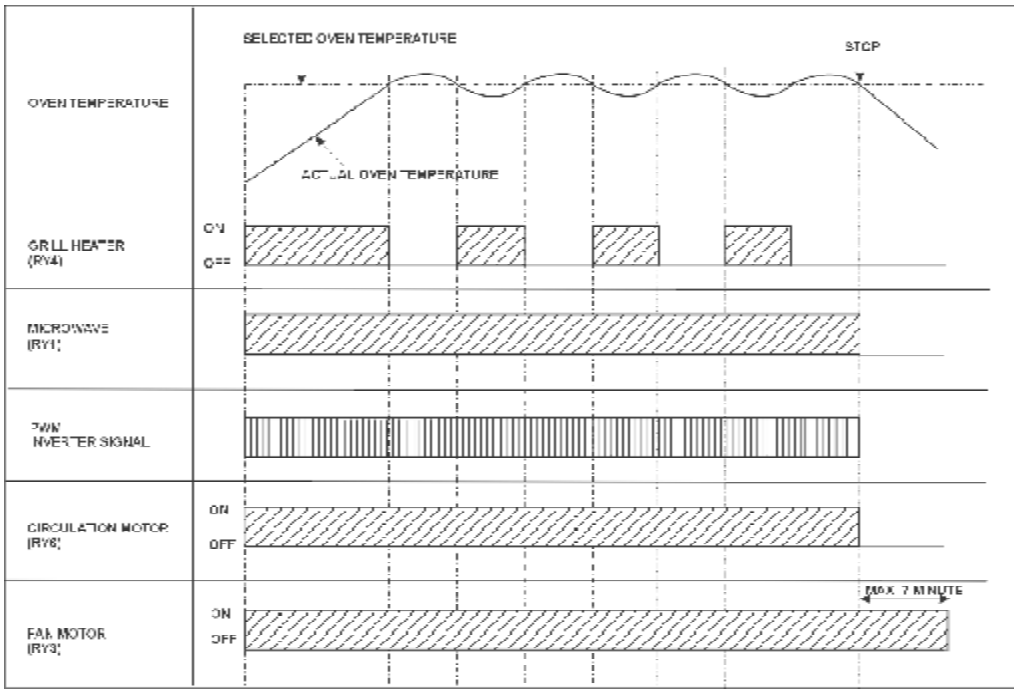
Convection Heater	Grill Heater			Micropower			
100 - 250 C		ON	OFF		OUTPUT	ON	OFF
	Grill 1	66	0	Medium	600W	22	0
	Grill 2	48	18	Low	440W	22	0
	Grill 3	36	30	Simmer	440W	14	8
				Warm	440W	7	15

Figure 1



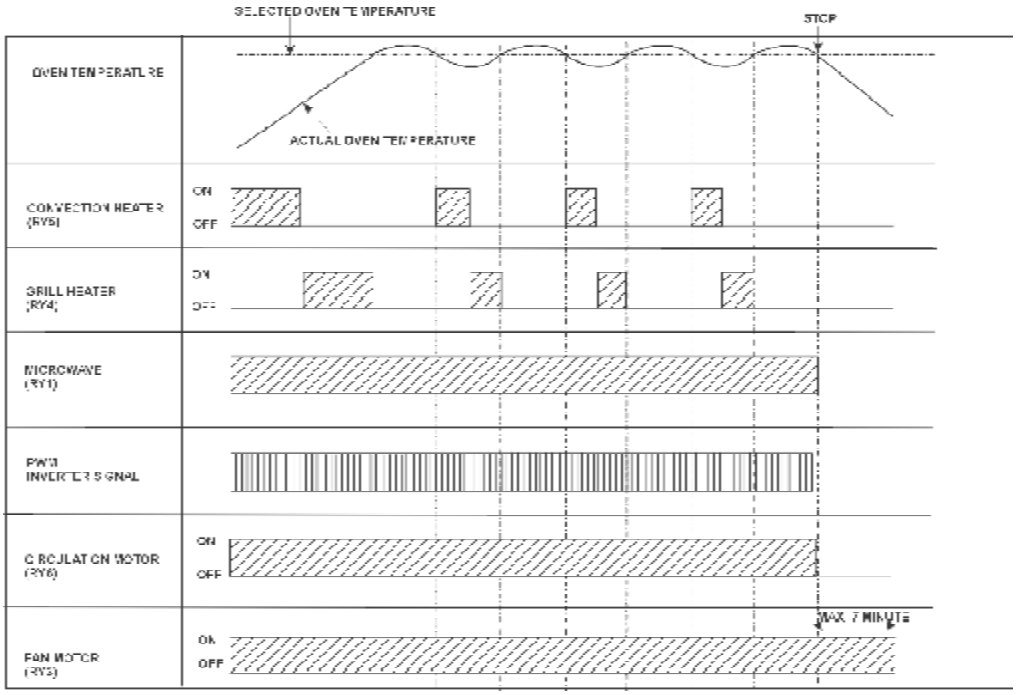
Convection And Microwave Duty Cycles

Figure 2



Grill and Microwave Duty Cycles

Figure 3



Grill, Convection And Microwave Duty Cycles

8. Cautions to Be Observed When Troubleshooting

Unlike many other appliances, the microwave oven is a high voltage, high current is device. Though it is free from danger in ordinary use, extreme care should be taken during repair.

Caution

Servicemen should remove their watches whenever working close to or replacing the magnetron.

8.1. Check the grounding

Do not operate on a two wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to ensure the appliance is properly grounded before beginning repair work.

8.2. Inverter Warnings

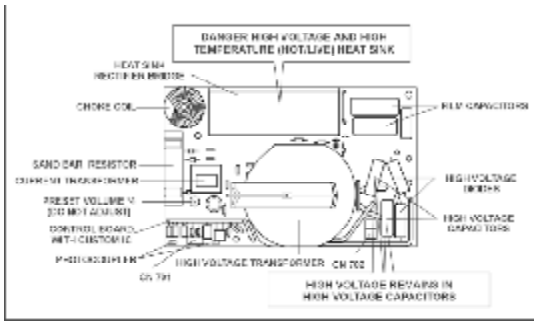
DANGER, HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LINE) OF THE INVERTER POWER SUPPLY (U)

This high voltage inverter power supply handles very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flyback transformer, however, the current is extremely large and is therefore, dangerous due to this high current and high voltage.

The aluminium heat sink is also energized with high voltage (HOT), so do not touch when the AC input terminal is connected. The power devices (Collector) is directly connected to the aluminium

heat sink.
The aluminium heat sink may be (HOT) due to heat energy, therefore, extreme care should be taken during servicing.

Figure 1

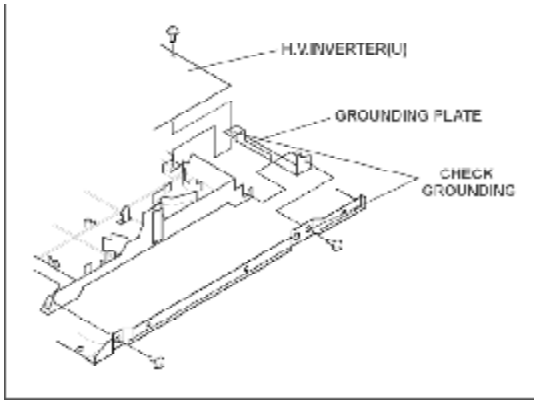

DANGER HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) HEAT SINK
CHOKE COIL
SAND BAR RESISTOR
HIGH VOLTAGE TRANSFORMER
HIGH VOLTAGE CAPACITORS

HV Inverter warning

WARNING FOR INVERTER POWER SUPPLY (U) GROUNDING

Check the high voltage inverter power supply circuit grounding. This high voltage inverter power supply circuit board must have a proper chassis ground, the inverter grounding bracket must be connected to the chassis. If the inverter board is not grounded it will expose very high voltages and cause extreme DANGER! Be sure that the inverter circuit is properly grounded via the inverter earth bracket.

Figure 2



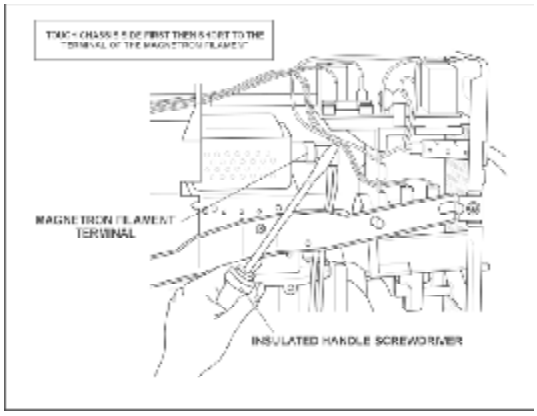
Grounding of the inverter circuit board

WARNING! DISCHARGE THE HIGH VOLATGE CAPACITORS

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.
When replacing or checking parts, remove the power plug from the outlet and short the inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle

screwdriver to discharge. Please be sure to touch the chassis ground side first and then short to the output terminals.

Figure 3



Discharging the high voltage capacitors

WARNING

There is high voltage present with high current capabilities in the circuits of the primary and secondary windings, choke coil and heat sink of the inverter. It is extremely dangerous to work on or near these circuits with the oven energized. DO NOT measure the voltage in the high voltage circuit including the filament voltage of the magnetron.

WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

8.3. When parts must be replaced, remove the power plug from the outlet.

8.4. When the 10A fuse is blown due to the operation of the short switch:

WARNING

when the 10A 250V fuse is blown due to the operation of the short switch, the primary latch switch and short switch must be replaced. It is also important to change the power relay 1 (RY1) when the continuity test shows shorted contacts.

1. **This mandatory. Refer to “adjustments and measurements” for the location of these switches.**
2. **When replacing the fuse, confirm that it has the appropriate rating for these models.**

3. When replacing faulty switches, be sure the mounting tabs are not bent, broken or deficient in their ability to hold the switches.

8.5. Avoid inserting nails, wire etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any holes or gaps, because such objects may work as an antenna and cause microwave leakage.

8.6. Confirm after repair

1. After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing. Microwaves might leak if screws are not properly tightened.
2. Make sure that all electrical connections are tight before inserting the plug into the wall outlet.
3. Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage).

CAUTION MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY

IMPORTANT NOTICE

The following components have potentials above 250V while is appliance is operated.

- Magnetron
- High voltage transformer (Located on inverter (U))
- High voltage diodes (Located on inverter (U))
- High voltage capacitors (Located on inverter (U))

Pay special attention in these areas.

When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/ cm^3. After repair or exchange, it is very important to check if the magnetron and the door hinges are correctly fixed.

8.7. Sharp Edges

Caution

Please use caution when unpacking, installing or moving the unit, as some exposed edges may be sharp to touch and cause injury if

not handled with care.

9. Parts Replacement Procedure

9.1. Magnetron

1. Discharge the high voltage capacitors on the inverter circuit.
2. Remove the screw holding the air guide
3. Remove the two screws holding the tie bar
4. Remove the oven lamp and lead wire harness cables form the air guide A.
5. Remove the air guide A
6. Disconnect the two high voltage leads from the magnetron
7. Remove the four screws holding the magnetron

NOTE: After replacing the magnetron, tighten the mounting screws making sure that there is no gap between the waveguide and the magnetron to prevent microwave leakage.

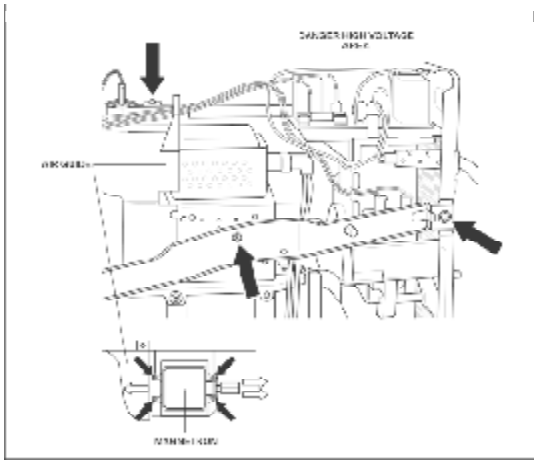
Caution

When replacing the magnetron, ensure that the antenna gasket is in place.

Note

The magnetron used for this model is unique for the inverter power supply system. Make sure to use the one as listed in the parts list.

Figure 1



Removal of the magnetron

9.2. Inverter power supply (U)

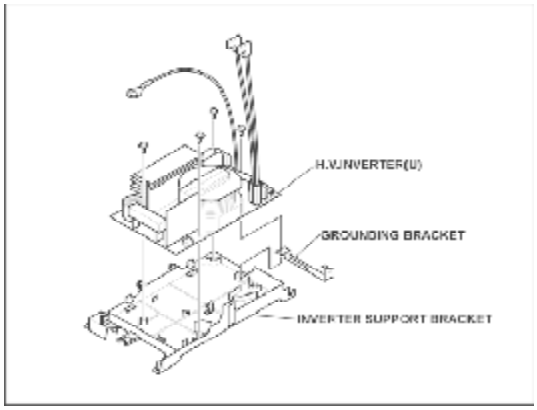
1. Discharge the high voltage capacitors
2. Remove two screws holding the tie bar.

3. Unplug the H.V. Lead wires from the magnetron
4. Remove the one screw holding the earth wire to the magnetron
5. Remove the connector CN701 and CN702 from the inverter PCB
6. Remove the two screws holding the inverter base to the chassis (See figure 2)
7. Carefully remove the inverter PCB and support base from the oven.
8. Remove the air guide E by un-clipping the catch hooks
9. Remove the four screws holding the PCB to the inverter support base.

Caution when replacing the inverter power supply (U)

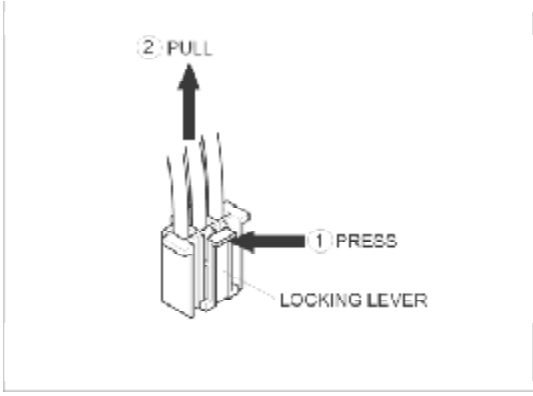
1. Make sure that grounding plate is in place
2. Securely tighten the grounding screw through the side of the chassis (Base).
3. Securely connect the 3 lead wire connectors
4. Make sure that the heat sink has enough space (gap) from the oven. Take care not to touch any lead wire to the aluminium heat sink because it is hot.

Figure 2



Removal of the inverter PCB

Figure 3



Disconnecting the PCB lock connector

9.3. Digital Programmer Circuit (DPC) and membrane key board.

NOTE: Ground any static electric built up on your body before handling the DPC.

1. **Disconnect all connectors from the DPC.**
2. **Remove the two screws holding the escutcheon base and slide the escutcheon base upward slightly. removal is easier with the door open.**
3. **Release the flat cable.**
4. **Remove the six screws holding the DPC DU assembly**
5. **Remove the door lever**
6. **Remove the seven screws holding the DPC AU assembly**

To remove escutcheon pad

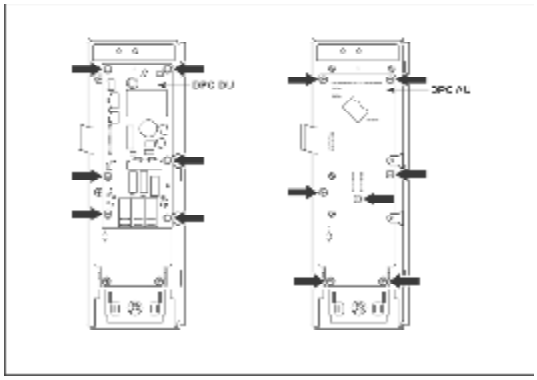
1. **Remove the escutcheon bracket from the escutcheon base by freeing the 4 catch hooks on the escutcheon base.**
2. **Peel away the display window from the inside of the base.**
3. **Remove the membrane assembly by pushing from the inside of the base and then peeling away from the outside surface.**

NOTE:

1. **The escutcheon key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal**
2. **When installing a new escutcheon key board, make sure that the surface of the escutcheon base is cleared sufficiently so that problems such as, shorted contacts and uneven surfaces can be avoided.**

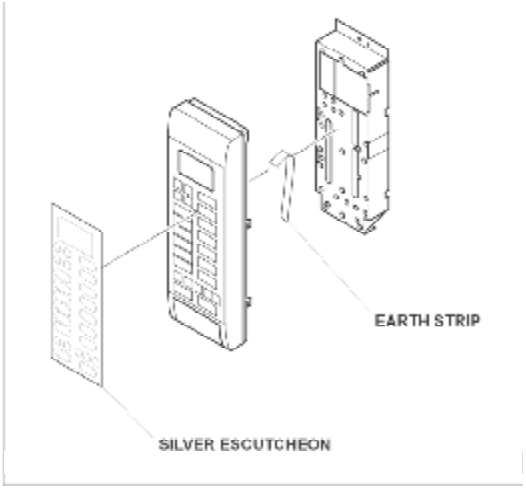
3. When replacing the silver escutcheon sheet (NN-A720MB) ensure that the escutcheon sheet is earthed to the back-plate via the earth strip.

Figure 4



Removal of DPC AU and DPC DU

Figure 5



Grounding of the silver escutcheon

9.4. Low voltage transformer and/or power relays (RY1)

Note

Be sure to ground your body to discharge any static before handling the DPC.

1. Using a solder wick or a de soldering tool and a 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.
2. With all of the terminal pins cleaned and separated from the DPC contacts, remove the defective transformer/power relays and install the new components making sure that the terminal pins are inserted completely. Carefully re solder all terminal contacts

carefully.

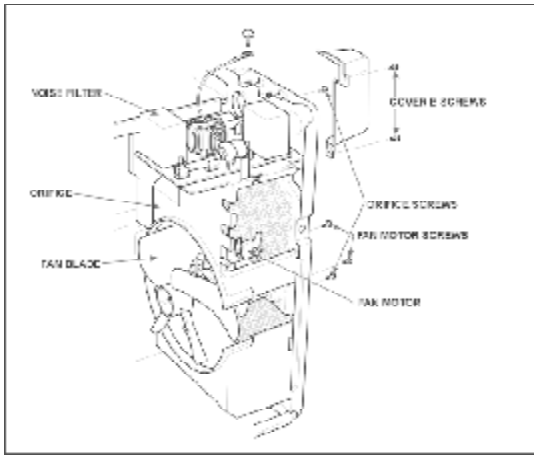
Note

Do not use a soldering iron or de soldering tool of more than 30 watts on DPC contacts

9.5. Fan Motor

1. Remove two screws and remove the tie bar
2. Disconnect the two lead wires from the fan motor terminals
3. Disconnect all lead wires from the noise filter
4. Remove the noise filter
5. Remove the air guide by removing the two screws
6. Remove the two screws holding the orifice assembly
7. Remove the two screws holding the fan motor assembly
8. Detach the orifice assembly and the fan motor assembly from the oven assembly.
9. Remove the fan blade from the fan motor by pulling outward.

Figure 6



Removing the fan motor

9.6. Door disassembly

1. Remove door C from door E by carefully pulling outward starting from the upper right hand corner using a flat blade screwdriver.
2. Remove four screws holding the door E to the door A assembly
3. Remove the door screen B by carefully un-clipping the screen from the door A catch hooks. Care must be taken not to damage

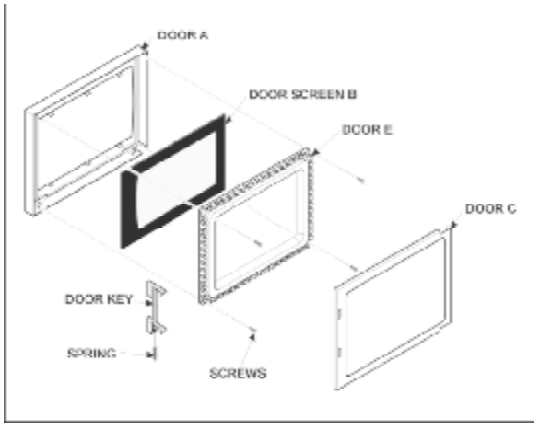
these hooks during disassembly.

4. Remove the door key and spring form the door E

After replacement of the defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent excessive microwave leakage.

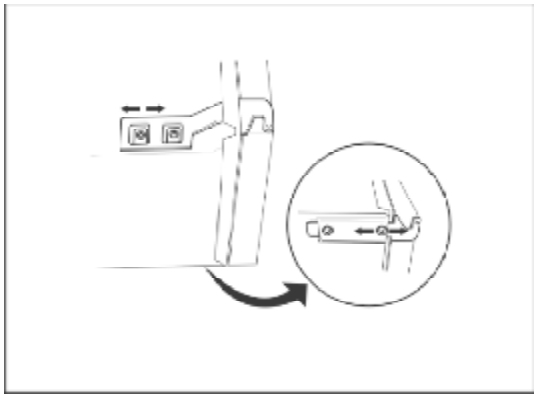
1. When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge in the direction necessary for proper alignment.
2. Adjust so that the door has no play between the inner door surface and the oven front surface. if the door assembly is not mounted properly, microwave power may leak from the clearance between the door and oven.
3. Perform the microwave leakage test.

Figure 7



Disassembly of the door

Figure 8



Adjusting the door hinge

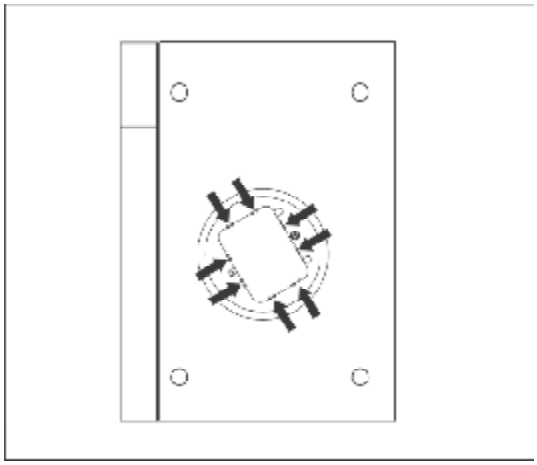
9.7. Turntable Motor

1. Remove the motor cover by breaking off at the 8 spots indicated by the arrows.
2. Disconnect the two lead wires connected to the turntable motor
3. Remove the turntable motor by removing the two screws

Note: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bent inside so that no sharp edges are exposed.

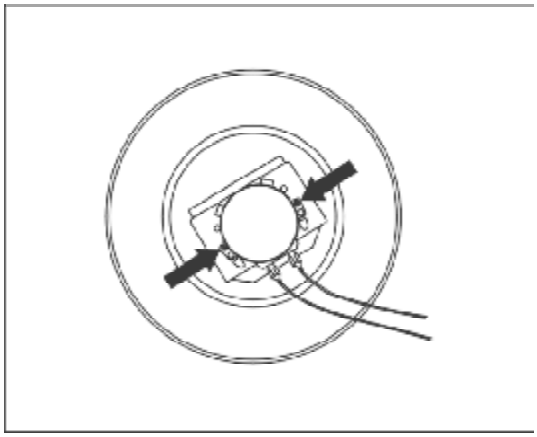
Note: To secure the motor cover use a 4 x 6 screw.

Figure 9



Removing the turntable motor cover

Figure 10

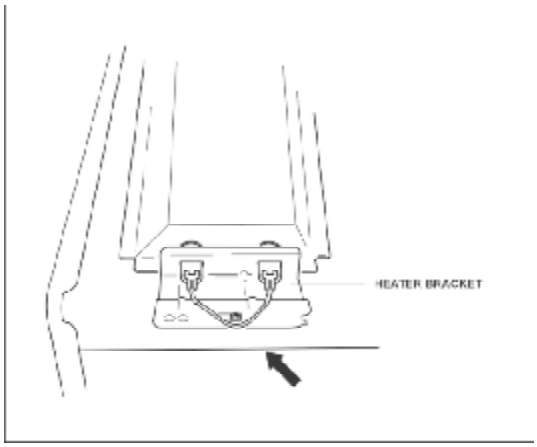


Two screws to remove the turntable motor

9.8. Quartz Heater

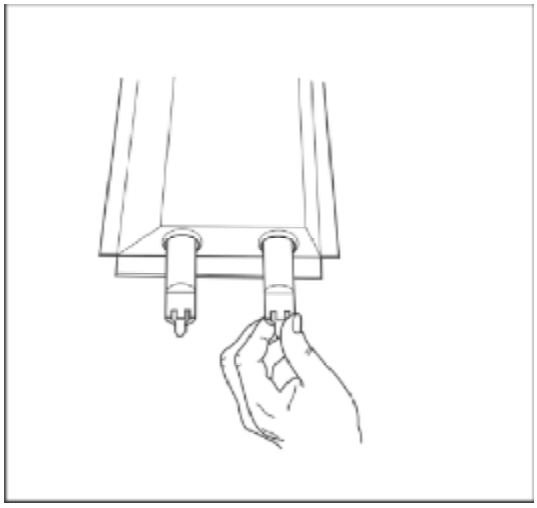
1. Disconnect the lead wires from the heater terminals
2. Remove one screw holding the heater supports
3. Remove the heater

Figure 11



One screw to remove the grill bracket

Figure 12



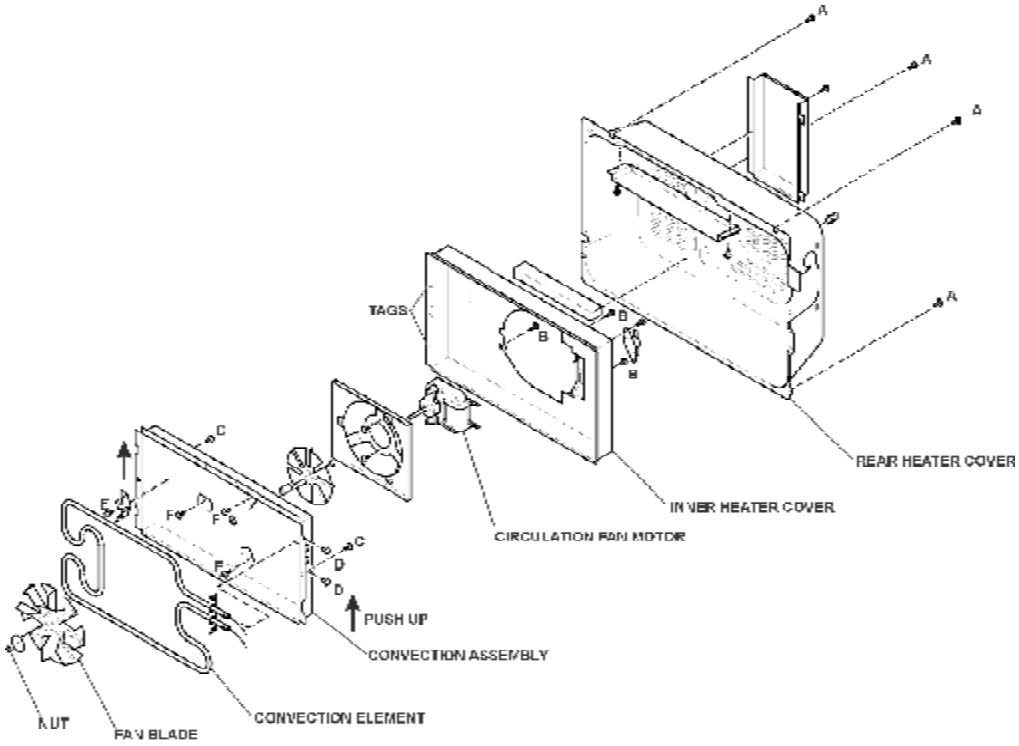
Removing the grill element

9.9. Convection Element And Circulation Fan Motor

1. **Remove the four screws A holding the rear heater cover.**
2. **Remove the wire terminals from the thermal cutout, circulation fan motor and the convection elements.**
3. **After removing the rear heater cover, remove the three screws B holding the inner heater cover.**
4. **Un clip the metal tags to remove the inner heater cover.**
5. **Remove the two screws C holding the convection assembly, push upwards to remove.**
6. **To remove the convection element remove the one screw E on the convection bracket A and 2 screws D on convection bracket B**
7. **Release the circulation fan nut to remove the circulation fan blade.**

8. Remove the three screws F to release the circulation fan motor assembly.

Figure 13

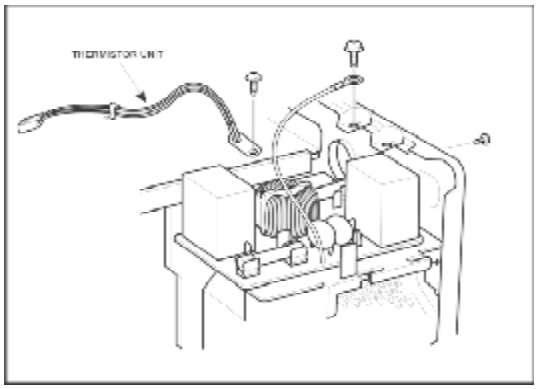


Disassembly of the rear convection assembly

9.10. Temperature Sensor

1. Remove lead wire plug from connector CN7
2. Remove 1 screw holding temperature sensor
3. Replace temperature sensor and lead wire as a complete unit.

Figure 14



Removing the temperature sensor unit

10. Component Test Procedure

Caution

1. High voltage is present at the high voltage terminal of the inverter unit, including the aluminium heat sink.
2. It is not necessary or advisable to attempt to measure this high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

10.1. Primary Latch Switch, Secondary Latch Switch and power relay B interlocks.

1. Unplug the lead connectors to power relay B and verify the continuity of the power relay B 1-2 terminals.
2. Unplug the lead connectors to the primary latch switch and secondary latch switch.
3. Test the continuity of the switches with the door open and closed with an ohm meter on the lowest scale.
   Normal continuity readings should be as followed.

	Door Open	Door Closed
Primary Latch Switch	infinite Ω (Open)	0 Ω (Close)
Secondary Latch switch	infinite Ω (Open)	0 Ω (Close)
Power relay B	infinite Ω (Open)	infinite Ω (Close)

10.2. Short Switch and Monitor Circuit

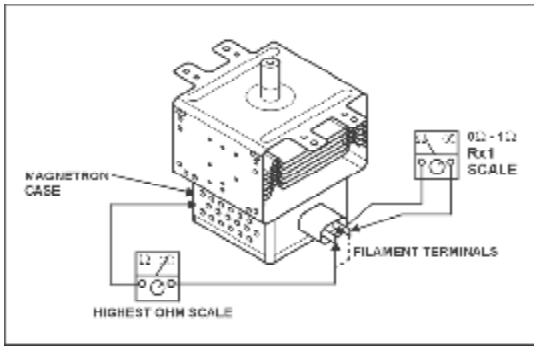
1. Unplug the lead wires from the HV inverter primary terminals.
2. Connect the test probes of the ohm meter to these leads
3. Test the continuity of the short switch with the door open and the door closed using the lowest ohm scale.

	Door Open	Door Closed
Monitor switch	0 Ω	infinte Ω

10.3. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose an open filament or shorted magnetron.

1. **Isolate the magnetron from the circuit by disconnecting the HV leads**
2. **A continuity check across the magnetron filament terminals should indicate one ohm or less**
3. **A continuity check between each filament terminal and the magnetron case should read open.**



10.4. Push Button Keyboard

Check the continuity between the switch terminals, by tapping an appropriate pad on the keyboard. The keypad matrix is shown on Key Board Matrix.

10.5. Inverter Power Supply

Caution

DO NOT try to repair this inverter power supply). Replace as a whole H.V. Inverter Unit.

Inverter Power Supply Diagram

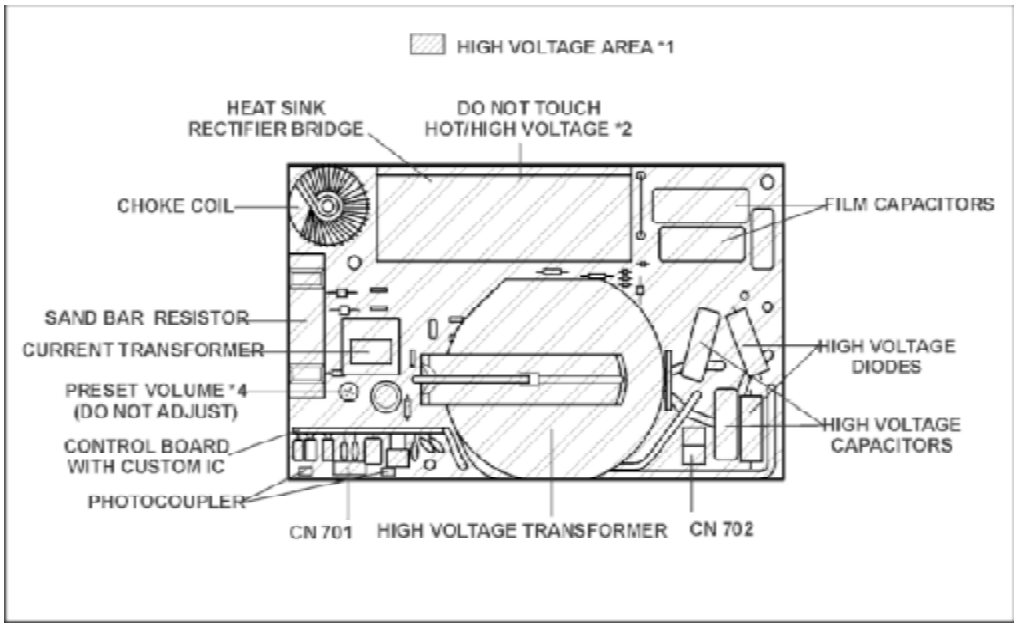


Figure 3

10.6. Inverter Power Supply Unit

Warning

Do not attempt to make any measurements in the high voltage circuitry of the inverter or magnetron.

See troubleshooting of the inverter circuit and magnetron on Figure 4 to determine if the inverter power supply is still functioning.

10.7. Temperature Sensor

A temperature sensor is mounted on the oven cavity on the right hand side. The resistance reading across the thermistor should read 300K ohm within a temperature range of 10 to 30 degrees centigrade. This would be the temperature range within a kitchen environment. If the resistance measured is outside this range the thermistor is defective and should be replaced.
NOTE: When measuring the resistance of the thermistor disconnect the connector from the digital programmer circuit.
NOTE: If the microwave oven has been operated allow to cool to room temperature before attempting to measure the thermistor resistance.

11. Measurements and Adjustments

Warning

- **For continued protection against radiation hazard, replace only with identical parts.**
- **When the 10 amp fuse is blown due to the operation of the short switch, you must replace the primary latch switch and short switch. Then follow the installation procedures below.**
- **Interlock switch replacement - In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their**

ability to hold the switches.

- Refer to the schematic and wiring diagram to ensure proper connection

11.1. Installation of primary latch switch, secondary latch switch and short switch.

1. When mounting the primary latch switch, secondary latch switch and short switch to the door hook assembly. Follow the instructions in figure 1.
   NOTE: No specific adjustment during the insulation of each switch into the door hook is necessary.
2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrow in figure 1. Ensuring the door does not have any play in it. Check for play by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
3. Reconnect the short switch, primary switch and secondary latch switches and check the continuity of the monitor circuit and latch switches by following the component test procedures on page.

11.2. Measurement of microwave output

The output power of the magnetron can be determined by performing the IEC standard test. However, due to the complexity of the IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary equipment:

- 1 liter beaker
- Glass thermometer
- Wrist watch or stop watch

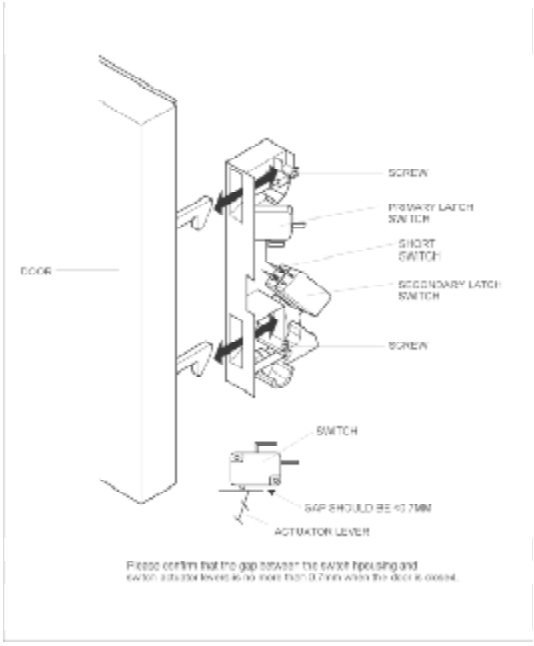
NOTE: Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurate as possible.

1. Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beakers temperature (Recorded as T1)
2. Place the beaker on the center of the glass cook plate.
3. Stir the water again and read the temperature of the beaker

(Recorded as T2)

4. The normal temperature rise at the high power position for each model is shown in the table. (Figure 2)

Figure 1



Adjustment of latch switch assembly

RATED OUTPUT	TEMPERATURE RISE
1000W	8°C

12. Troubleshooting guide

Caution

1. Do not try to repair this H.V. Inverter power supply. Replace as a whole unit. When returning the inverter unit pack in the original inverter box.
2. Do not adjust the preset volume on the H.V. Inverter. It is very dangerous to repair or adjust without sufficient test equiptment, this circuit handles very high volatge and current
3. Ensure a good ground connection before beginning any troubleshooting
4. Be careful of the high voltage circuit and take necessary precautions when troubleshooting

5. **Discharge the high voltage capacitors on the inverter.**
6. **When checking the continuity of the switches on the H.V. inverter, disconnect one lead wire from these parts and then check the continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. When disconnecting a plastic connector from a terminal, you must hold the plastic connector and not the lead wire, otherwise the lead wire may become open circuit.**
7. **Do not touch any parts of the circuitry on the digital programmer cicruit, since static electric discharge may damage this control panel.**
   Whilst working on this board ensure that that your body is connected to ground to discharge any static charge.
8. **240 VAC is present on the digital programmer circuit. (Terminals of the power relays and the primary circuit of the low voltage transformer). When troubleshooting, be cautious of possible electric shock.**

Before troubleshooting, operate the microwave oven following the correct operating procedures in the instruction manual in order to find the exact cause of any trouble, since operator error may be mistaken for the ovens malfunction.

Figure 1

	SYMPTOMS	CAUSE	CORRECTIONS
1.	Oven is dead Fuse is OK No display and no operation at all.	1. Oper or loose lead wire harness. 2. Oper low voltage transformer 3. Defective DPC AU or DPC DU	
2.	Oven does not accept key input (Program).	1. Key input is not in sequence. 2. Shorted push button or DPC AU 3. Defective DPC AU	Refer to operation procedure. Refer to DPC troubleshooting.
3.	Oven lamp and turntable motor turn on when oven is plugged in with door closed	1. Misadjustment or loose wiring of secondary latch switch. 2. Defective secondary latch switch	Adjust door and latch switches.
4.	Timer starts countdown but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches 2. Oper or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to have lower output and/or be intermittent. 3. Defective high voltage component H.V. Inverter NEW—V. Magnetron 4. Oper or loose wiring of power relay (RY1) 5. Defective primary latch switch. 6. Defective power relay RY1 or DPC AU or DU.	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting.
5.	No operation of grill or convection elements	1. Oper thermal cut-out SW1 2. Defective connection or grill element 3. Defective power relay (RY5 or RY4). 4. Defective DPC	

Troubleshooting (No Operation)

Figure 2

SYMPTOMS	CAUSE	CORRECTIONS
1. No display and no operation at all. 16A Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switch (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective Inverter power supply (U) NEW H.V. Refer to component test procedure	Check adjustment of primary secondary latch switch and short switch including door.
	NOTE 1: All of these switches must be replaced at the same time. (Refer to adjustment instructions.) Check continuity of power relay RY-S contacts (between 1 and 2) and if it has continuity replace power relay RY-S also.	
2. 16A Fuse is blown	1. Shorted lead wire harness 2. Short convection element 3. Shorted grill element	

Troubleshooting (Fuse is blown)

Figure 3

	SYMPTOMS	CAUSE	CORRECTIONS
1	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation) 3. Aging change of magnetron.	Consult electrician. Refer to output test procedures by water temperature raising test.
2	Turntable or when door is opened.	1. Shorted primary latch switch.	
3	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
4	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
5	Oven stops operation during cooking	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cut-out	Adjust door and latch switches.
6	Oven returns to plug in mode 1 minute after start pad is pressed.	1. Open thermistor circuit 2. Defective thermistor	

Troubleshooting (Other problems)

Figure 4

Troubleshooting of Inverter Circuit (U) and Magnetron NEW H.V.

Oven shuts down after approximately 15 or 33 seconds.

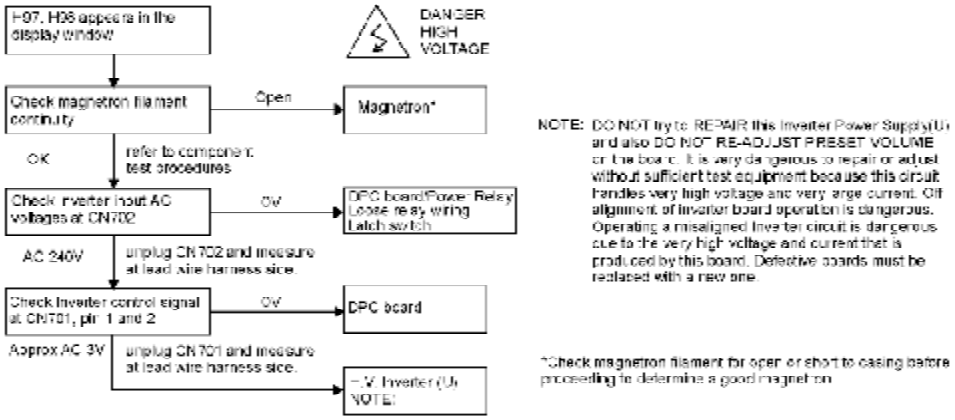
If the microwave oven shuts down after a short time in micropower mode, conduct the following test.

The microwave oven must be set in test mode to activate the self diagnostic failure code system.

SELF TEST MODE

When oven is set in test mode place water load in oven set micropower to high and time to 1 minute, press start.

H97, H98 appears in display window a short time after start key is pressed and there is no microwave oscillation.


H97, H98 appears in the display window
DANGER HIGH VOLTAGE
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
Check inverter input AC voltages at CN702
0V
DPC board/Power Relay Loose relay wiring Latch switch
AC 240V
unplug CN702 and measure at lead wire harness side
Check inverter control signal at CN701, pin 1 and 2
0V
DPC board
Approx AC 3V
unplug CN701 and measure at lead wire harness side.
→V. Inverter (U) NOTE!

NOTE: DO NOT try to REPAIR this Inverter Power Supply(U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

*Check magnetron filament for open or short to casing before proceeding to determine a good magnetron

Troubleshooting Inverter by Input out voltage

Figure 5

Alternative way to troubleshooting oven with AC Ampare meter used. NEW H.V.

Oven shuts down after approximately 15 or 33 seconds.

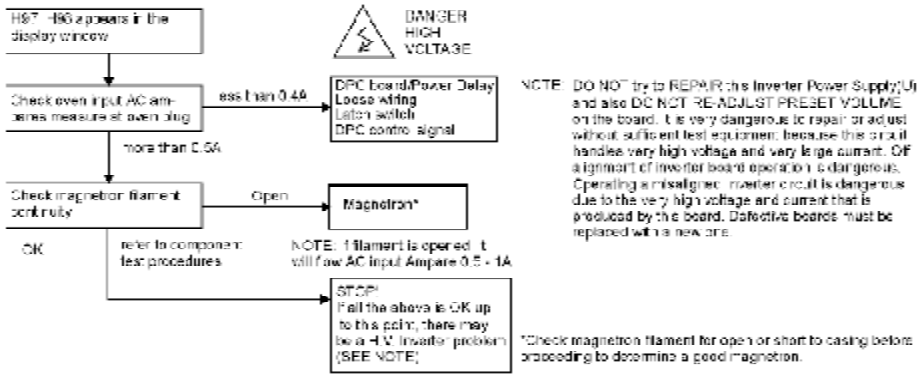
If the microwave oven shuts down after a short time in micropower mode, conduct the following test.

The microwave oven must be set in test mode to activate the self diagnostic failure code system.

SELF TEST MODE

When oven is set in test mode place water load in oven, set micropower to high and time to 1 minute, press start.

H87, H98 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampare meter used for troubleshooting.


H87, H98 appears in the display window
DANGER HIGH VOLTAGE
Check oven input AC ampares measure at oven plug
less than 0.4A
DPC board/Power Delay
Loose wiring
Latch switch
DPC control signal
more than 0.5A
Check magnetron filament continuity
Open
Magnetron*
OK
refer to component test procedures
NOTE: If filament is opened, it will draw AC input Ampare 0.5 - 1A
STOP!
If all the above is OK up to this point, there may be a H.V. Inverter problem (SEE NOTE)
NOTE: DO NOT try to REPAIR the Inverter Power Supply Unit and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment, because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.
*Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Troubleshooting Inverter by Microwave Oven Input Current

13. Digital Programmer Circuit Troubleshooting Guide

Trouble Related to Digital Programmer Circuit

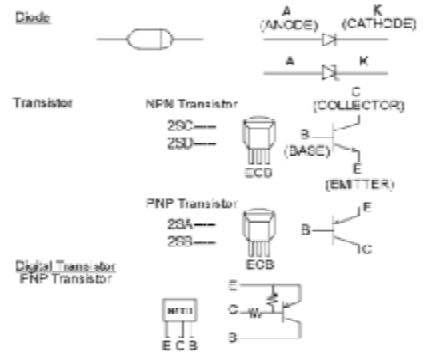
SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in.	1	Fuse pattern of DPC	Normal	STEP 2
			Oper (NOTE)	Shorted Circuit of ZNR, L.V.T., Over Lamp etc. Replace DPC
Oven is dead.	2	IC10 Pin 9 (12V Line)	Abnormal 0V	IC 10
			Normal 12V	→ Step 3
	3	IC-1 Pin 8 voltage (Emitter of Q10)	Abnormal	ZD13, Q10, Ribbon Cable
			Normal = 5V	→ Step 4
	4	IC-1 pin 27 voltage (15 pin of IC220)	Abnormal	IC-220
			Normal	→ IC-1, CX1

NOTE
Procedure of fuse pattern repairing is as follows
1. Wire (the fuse pattern (PF2) opens
(1) Remove the jumper wire (PF3).
(2) Insert the removed jumper wire (PF3) to 'PF2' position and solder it. If both 'PF2' and 'PF3' fuse patterns are open, please replace DPC
NOTE * At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).
If any abnormal condition is detected, replace the defective parts.

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No key input	1	Push button switch	Abnormal	Push button switch
			Normal	IC-1
No beep sound	1	IC-1 pin 12, voltage	Abnormal	IC-1
			Normal	IC220, PZ510
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped.	1	IC-1 pin 25voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	Short circuit between pin 6 and pin 16 of IC-2	Still not turn on	RY-2
			RY-2 turns on	IC-220
No microwave oscillation at any power setting.	1	IC-1 pin 18 and 16 voltages while operation at high power	Abnormal	IC-1
			Normal 7—5V, 72—5V	→ Step 2
	2	Q221 transistor	Abnormal	Q221
			Normal	IC220, Q226, RY1
No Grill Operation at any power setting.	1	IC-1 pin 18 and 15 voltages while operation at high power	Abnormal	IC-1
			Normal 7—5V, 72—5V	→ Step 2
	2	Q222 transistor	Abnormal	Q222
			Normal	IC220, Q226, RY4
No convection operation at any power setting.	1	IC-1 pin 18 and 17 voltages while operation at high power	Abnormal	IC-1
			Normal 7—5V, 72—5V	→ Step 2
	2	Q223 transistor	Abnormal	Q223
			Normal	IC220, Q226, RY5
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY
Oven suits down on Microwave after a short time test in test mode (set High power 1 Min) H97/H98 appears in window and oven stops operation. Program High power for 1 minute and conduct following test quickly, unless H97/H98 appears and oven stops. NEW-TY	1	Unplug CN702(2 pin) connector and measure voltage between terminals	0V	1. Latch switch 2. DPC/Power relay
			40 line voltage of 240V	→ Step 2
	2	Unplug CN701(3 pin) connector and measure pin 1 voltage	0V	1. DPC
			Approx. AV 3V	1. Magnetron 2. inverter

Figure 2

How to Check the Semiconductors Using an OHM Meter



	FORWARD	REVERSE
A-K	SMALL	∞

	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

	FORWARD	REVERSE
E-B	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

	FORWARD	REVERSE
E-B	10kΩ(~30kΩ)	30kΩ(~∞kΩ)
C-B	50kΩ(~90kΩ)	∞
C-E	40kΩ(~80kΩ)	∞

How to test the semiconductors

14. Main Parts List

1. Part numbers are indicated on most mechanical parts. Please use these part numbers for part orders. Do not use the description of the part.

Important safety notice

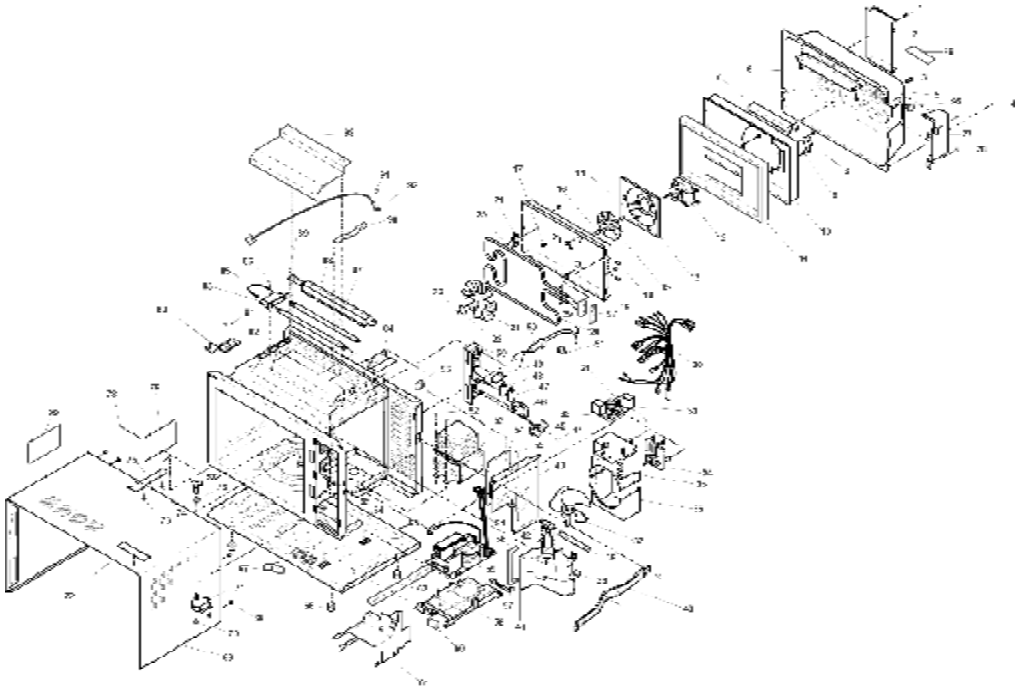
1. Components identified by! mark have special characteristics important for safety. When replacing any of these components, use only the manufacturers specified parts.

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
1	XTWANE 4 + 8BN	Screw	1	
2	E41194V00BP	Exhaust Guide D	1	
3	E6061002	Strike	1	
4	XTWANE 4+8BN	Screw	1	
5	E10584V00BP	Back Plate Cover A	1	NN-A750WB NN-A720MB
5	E10584V00SBP	Back Plate Cover A	1	NN-A770SB
6	E41074V00BP	Exhaust Guide B	1	
7	ANE0964000BK	Cushion Rubber	1	
8	E61454V00BP	Thermal Cut-Out	1	
9	XTWANE 4+8BN	Screws	3	
10	E66804V00BP	Heater Cover B	1	
11	E22424V00BP	Adiabatic Material A	1	
12	E490S4V00BP	Circulation Fan Motor	1	
13	E41804V00BP	Motor Bracket	1	
14	XTBANE 4+8BN	Screws	3	
15	E41594V00BP	Cooling Fan	1	
16	E41614V00BP	Fan Spacer A	1	
17	XTWANE 4+8BN	Screws	3	
18	XTBANE 4 + 8BN	Screws	2	
19	E66794V00BP	Heater Cover A	1	
20	E630H4V00BP	Heater Unit	1	
21	E22394V00BP	Circulation Fan	1	
22	E41634V00BP	Fan Spacer C	1	
23	XNG4EVSL	Nut	1	
24	E64174V00BP	Heater Bracket A	1	
25	XTWANE 4 + 8BN	Screw	1	
26	E00064080BP	Warning Label	1	
27	E10594V00BP	Back Plate Cover B	1	
28	XTWANE 4+8BN	Screws	2	
29	E22594V00BP	Adiabatic Material D	1	
30	E030A4V00BP	Lead Wire Harness	1	
31	E67597550GP	10A Fuse	1	
32	AEE6230P10GN	16A Fuse	1	
33	E607X4N30BP	Noise Filter	1	
34	E400A4760JP	Fan Motor	1	
35	E41444N30BP	Upper Orifice	1	
36	E42094N30BP	Lower Orifice	1	
37	E4008-1640	Fan Blade	1	
38	E09020000AF	Cushion Rubber	1	

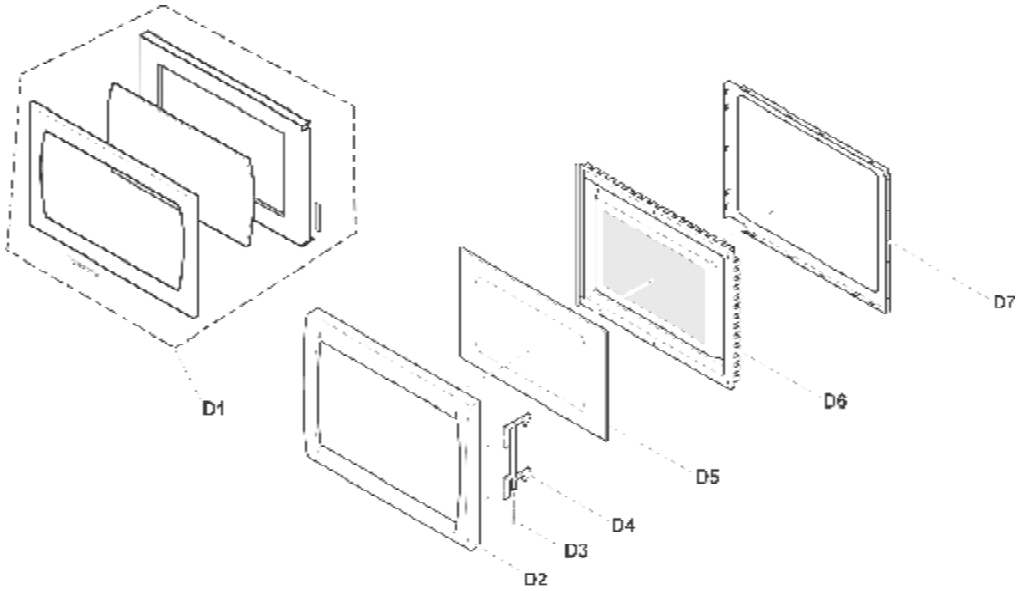
Ref. No.	Part No.	Part Name & Description	Qty	Remarks
39	E09020000AA	Cushion Rubber	1	
40	E20994N30BP	Reinforcement Bracket A	1	
41	E40474N30BP	Air Guide A	1	
42	E610T6700BP	Lamp Assembly	1	
43	E22364V00BP	Right Hand Heater Panel	1	
44	XTW4 +12T	Screw	1	
45	E31374830AP	Hook Spacer B	1	
46	E31384830AP	Hook Spacer C	1	
47	E61425180AP	Secondary Latch Switch	1	L-3C2-2
48	E61785180AP	Short Switch	1	L-2C2-2
49	AEE6142-1450	Primary Latch Switch	1	V-16G-3C26-M
50	E30208000BP	Door Hook	1	
51	AEE9108820GN	Holder	1	
52	XTWANE 4+ 12B	Screws	4	For Magnetron
53	2M236-M42G	Magnetron	1	
54	E22434V00BP	Adiabatic Material	1	
55	XTWANE 4 + 8BN	Screw	1	
56	AEE0926000AN	Cushion Rubber	1	
57	E66014V00BP	Inverter Earth Bracket	1	
58	E65854V00BP	Inverter Support Bracket	1	
59	E606Y4V00GP	Inverter	1	
60	E09250000BD	Cushion Rubber	1	
61	E40474V00BP	Air Guide E	1	
62	E09020000AL	Cushion Rubber	1	
63	E10014N30BP	Base Plate	1	
64	E09270000AH	Cushion Rubber	1	
65	E09270000AM	Cushion Rubber	1	
66	E1008-1180	Rubber Foot	4	
67	E09270000AM	Cushion Rubber	1	
68	XTWA 4+12CF	Screws	6	
69	E110D4V00HBP	Outer Panel	1	NN-A750WB
69	E110D4V00NBP	Outer panel		NN-A720MB
69	E110D4V00SBP	Outer Panel		NN-A770SB
70	XTW 3+6B	Screws	2	
71	E63268960JP	Turntable Motor	1	
72	E01507550BP	Outer Panel Warning Label	1	NN-A750WB
72	E01504V00SBP	Outer Panel Warning Label	1	NN-A770SB
72	E01507560BP	Outer Panel Warning Label	1	NN-A720MB NN-A770SB
73	XTWA 4 + 12CF	Screw	1	
74	XTWA 4 + 12DF	Screw	1	
75	E30074L00GS	Lower Hinge	1	
76	E21778000BP	Pulley Shaft Washer	1	
77	E21315870GP	Pulley Shaft	1	
78	XST4 + W5V	Screw	1	
79	E20554L00GS	Cover A	1	
80	E30064N30BP	Upper Hinge	1	
81	XTWA 4+12CF	Screws	2	
82	E200A4V00BP	Oven cavity	1	
83	E64604N30BP	Heater Support Bracket	1	
84	E64604N30BP	Heater Support Bracket	1	
85	E03594N30GP	Lead Wire Grill Link	1	
86	XTWANE4 + 8BN	Screw	1	
87	E630G8000BP	Quartz Heater	2	

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
88	E40244V00BP	Exhaust Guide A	1	
89	XTWANE 4+8BN	Screw	1	
90	E09230000AL	Cushion Rubber	1	
91	XTWANE 4+8BN	Screw	1	
92	E605A-1960	Temperature Sensor	1	
93	E900C6520BP	Power cord	1	
94	E030E4N30BP	H.V Lead Wire	1	
95	E90314V00BP	Holder	1	
96	E90314VOOBP	Holder	1	
97	E67579000BP	Heater bracket D	1	
98	E203B4V00SBP	Heater Cover	1	NN-A770SB
99	E01504V00SBP	Warning label	1	NN-A770SB

15. Exploded View



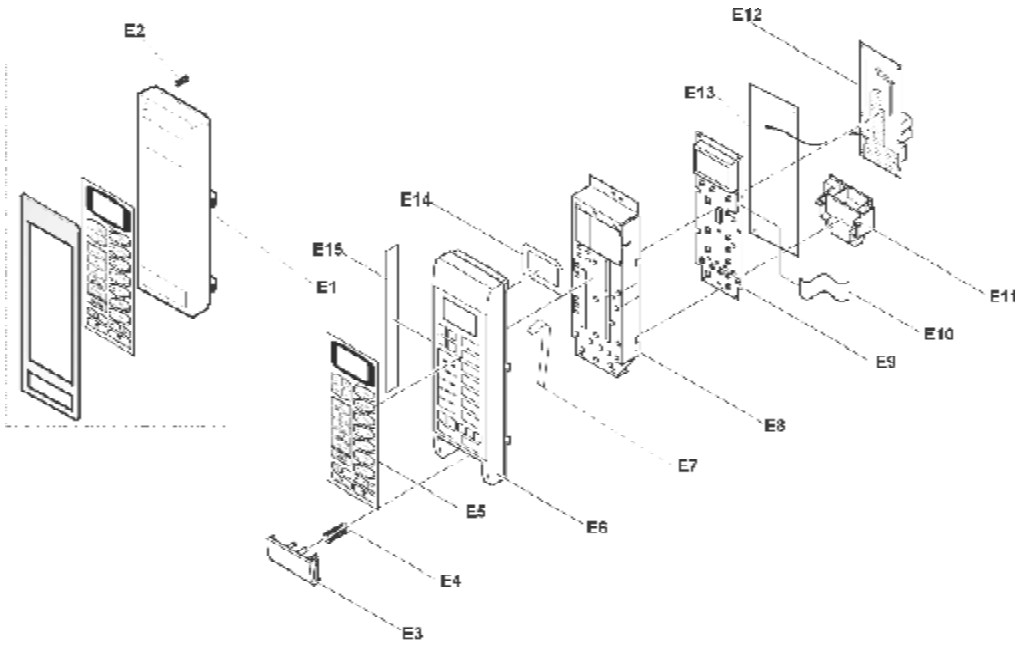
16. Door Assembly



Ref. No.	Part No.	Part Name & Description	Qty	Remarks
D1	E302A4V00SBP	Door A Assembly	1	NN-A770SB
D2	E30014V00HBP	Door A	1	NN-A750WB
D2	E30014V00NBP	Door A	1	NN-A720WB
D3	E30214000AP	Door Key Spring	1	
D4	E30184L00GS	Door Key	1	
D5	E31464V00BP	Door Screen B	1	
D6	E302K4V00BP	Door E	1	
D7	E30854V00BP	Door Screen C	1	

NOTE: When ordering any Door component also order door C as this part may become damaged during disassembly.

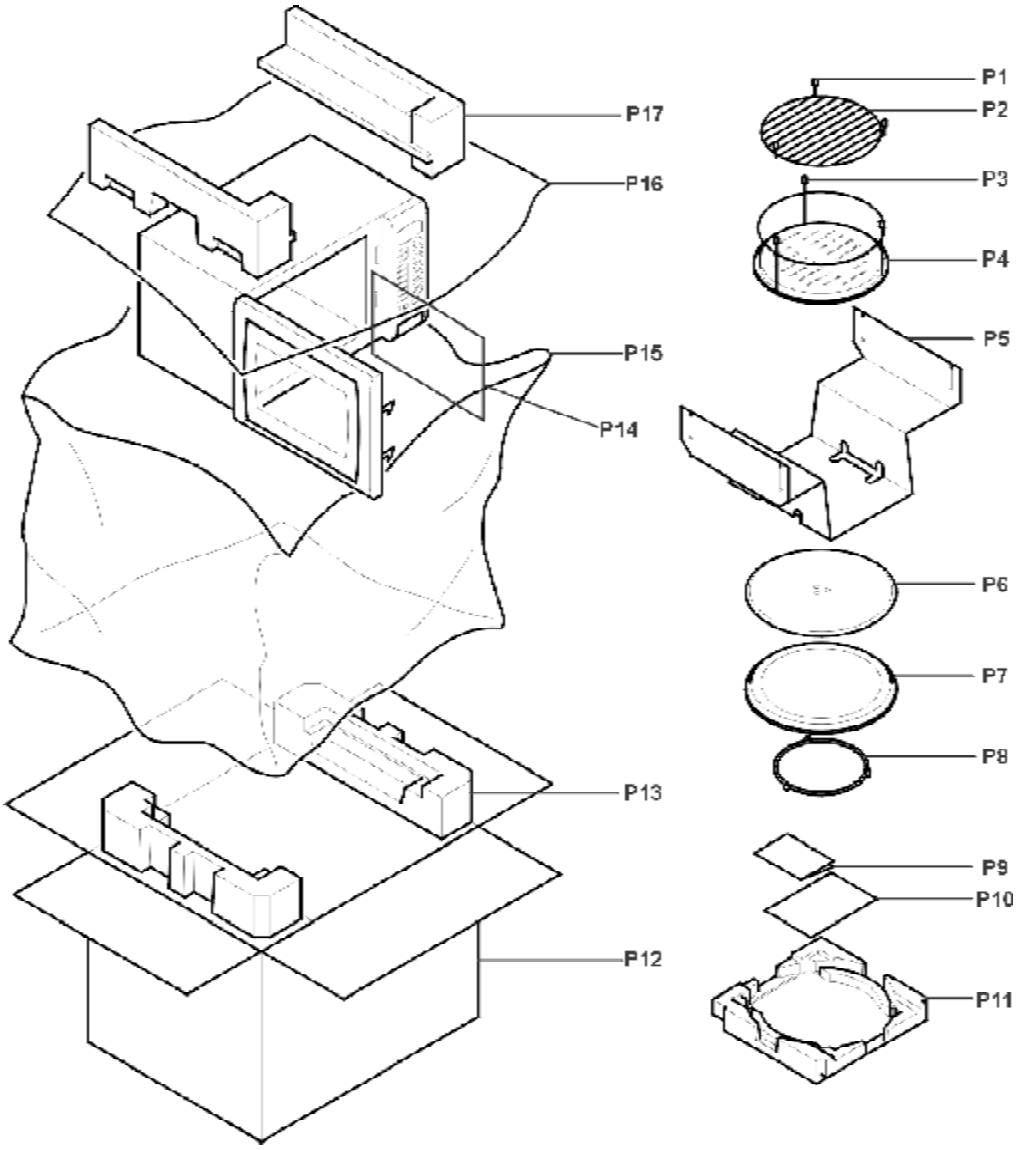
17. Escutcheon Base



Ref. No.	Part No.	Part Name & Description	Qty	Remarks
E1	E800S4V00SBP	Escutcheon Assembly	1	! NN-A770SB
E2	E80074L00SGS	Spring	1	NN-A770SB
E3	E80724L10HBP	Door opening button	1	NN-A750WB
E3	E80724L10NBP	Door opening button	1	NN-A720MB
E3	E80724V00SBP	Door opening button	1	NN-A770SB
E4	E80378A0AG	Door button spring	1	NN-A770SB
E5	E83374V00HBP	Escutcheon sheet	1	NN-A750WB
E5	E83374V00NBP	Escutcheon sheet	1	NN-A720MB
E6	E80344L10HBP	Escutcheon Base	1	NN-A750WB
E6	E80344L10NBP	Escutcheon Base	1	NN-A720MB
E7	E90014N30BP	Earth Strip	1	NN-A720MB
E8	E81274L10BP	Back plate	1	NN-A750WB NN-A720MB
E8	E81274V00SBP	Back plate	1	NN-A770SB
E9	E603L4V00BP	DPC AU	1	!
E10	E66164L00GS	Ribbon cable	1	
E11	E82564L10BP	Door opening lever	1	NN-A750WB NN-A720MB
E11	E82564V00SBP	Door opening lever	1	NN-A770SB
E12	E603Y4V00BP	DPC DU	1	!
E13	E607044V00SBP	Insulation sheet	1	NN-A770SB
E14	E83264V20BP	Display sheet	1	
E15	E00074V00BP	Name plate	1	

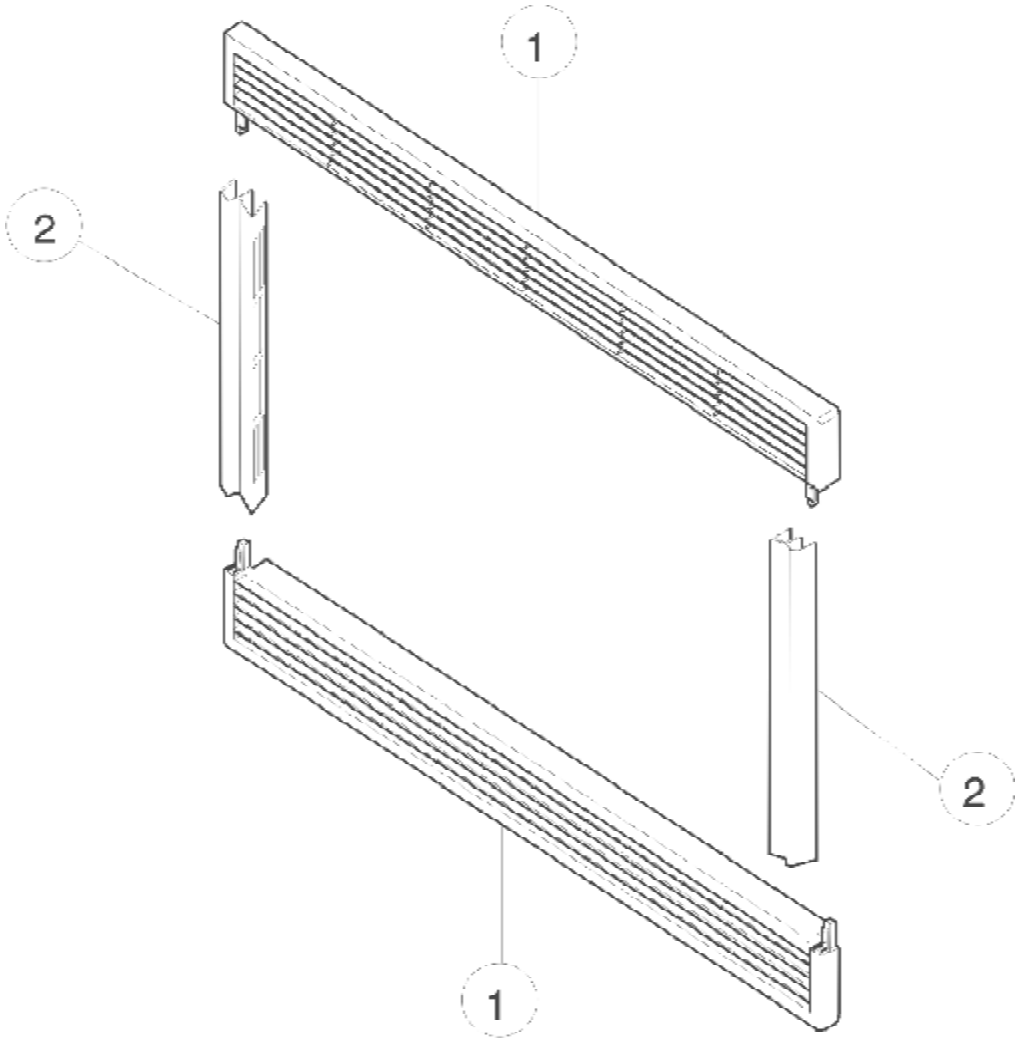
NOTE: Please order the escutcheon base and name plate together
NOTE: When replacing the silver escutcheon sheet ensure it is earthed to the escutcheon back plate via the earth strip
NOTE: When replacing the stainless escutcheon assembly, be sure that the fascia is earthed to the back plate via the earth spring.

18. Packing And Accessories


P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
P15
P16
P17

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
P1	E06435870GS	Rubber foot	3	RED
P2	E060V8020BP	Wire rack low	1	
P3	E06435870SP	Rubber foot	3	BLACK
P4	E060V6520BP	Wire rack high	1	
P5	E01084V00BP	Tray packing	1	
P6	E06014N30BP	Glass tray	1	
P7	E06015020GP	Enamel tray	1	
P8	E290D4N00BP	Roller ring	1	
P9	E01695750BP	Service center list	1	
P10	E00034V00BP	Operating instructions and cook book	1	
P11	E01134N30BP	Tray styrol	1	
P12	E01024V00HBP	Carton box	1	NN-A750WB
P12	E01024V00NBP	Carton box	1	NN-A720MB
P12	E01024V00SBP	Carton box	1	NN-A770SB
P13	E01054V00BP	Lower filler	1	
P14	E01076700BP	Door sheet	1	
P15	E01066750BP	Vinyl Cover	1	
P16	E01926430GP	Protector sheet	1	NN-A720MB
P17	E01044V00BP	Upper filler	1	

19. Trim Kit Accessories

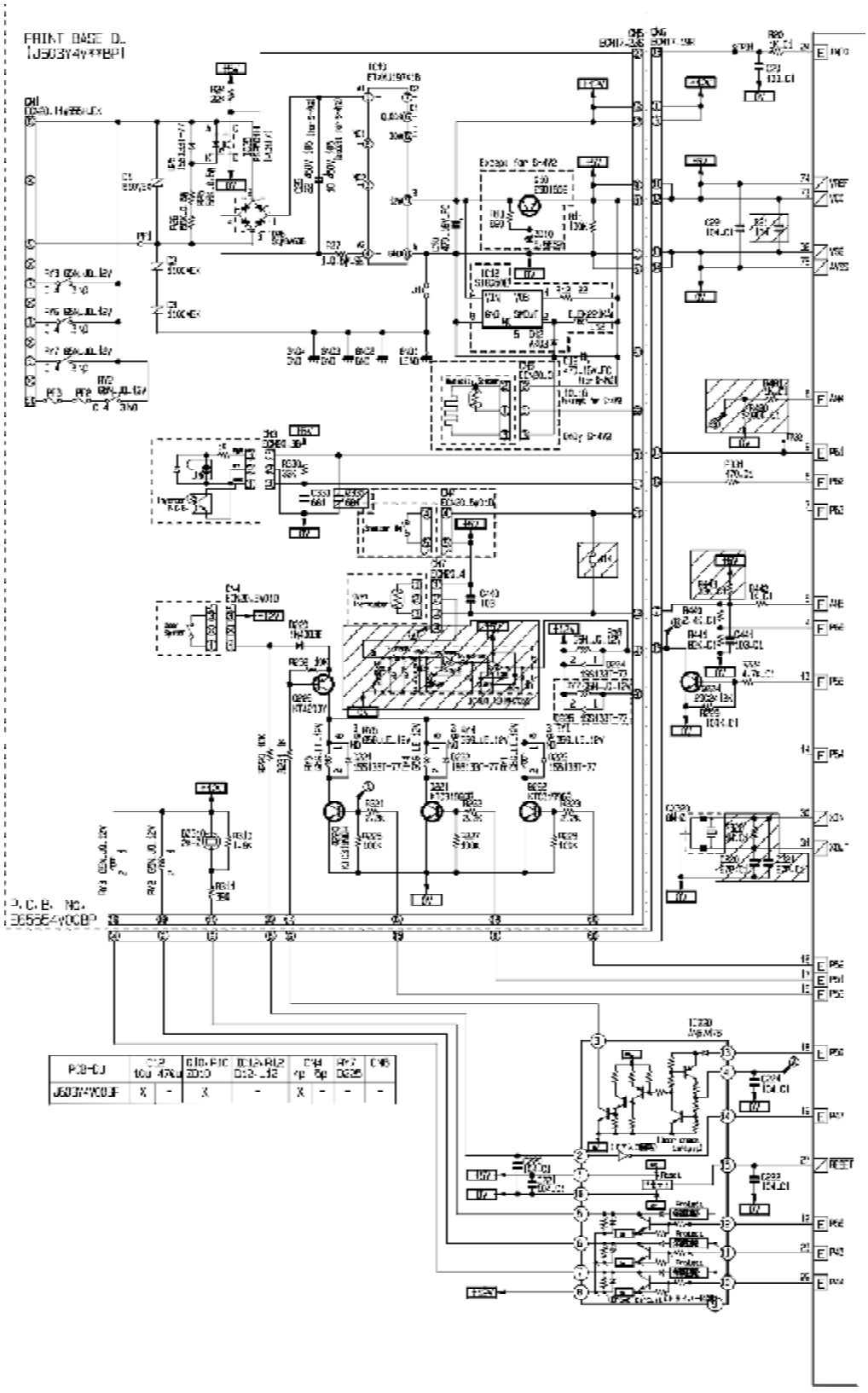


Trim Model No.	Top and Bottom Strip REF NO. 1	Set	Side Strip REF NO 2.	Set	Microwave Ovcen Model No.
NN-TKA70	E1603A510HBP	1	E1601A510HBP		NN-A750WB
	E1603A510HBP		E1601A510HBP		
NN-TKA70	E1603A510NBP	1	E1601A510NBP		NN-A720MB
INSTALLATION GUIDE			E000QA820BP		

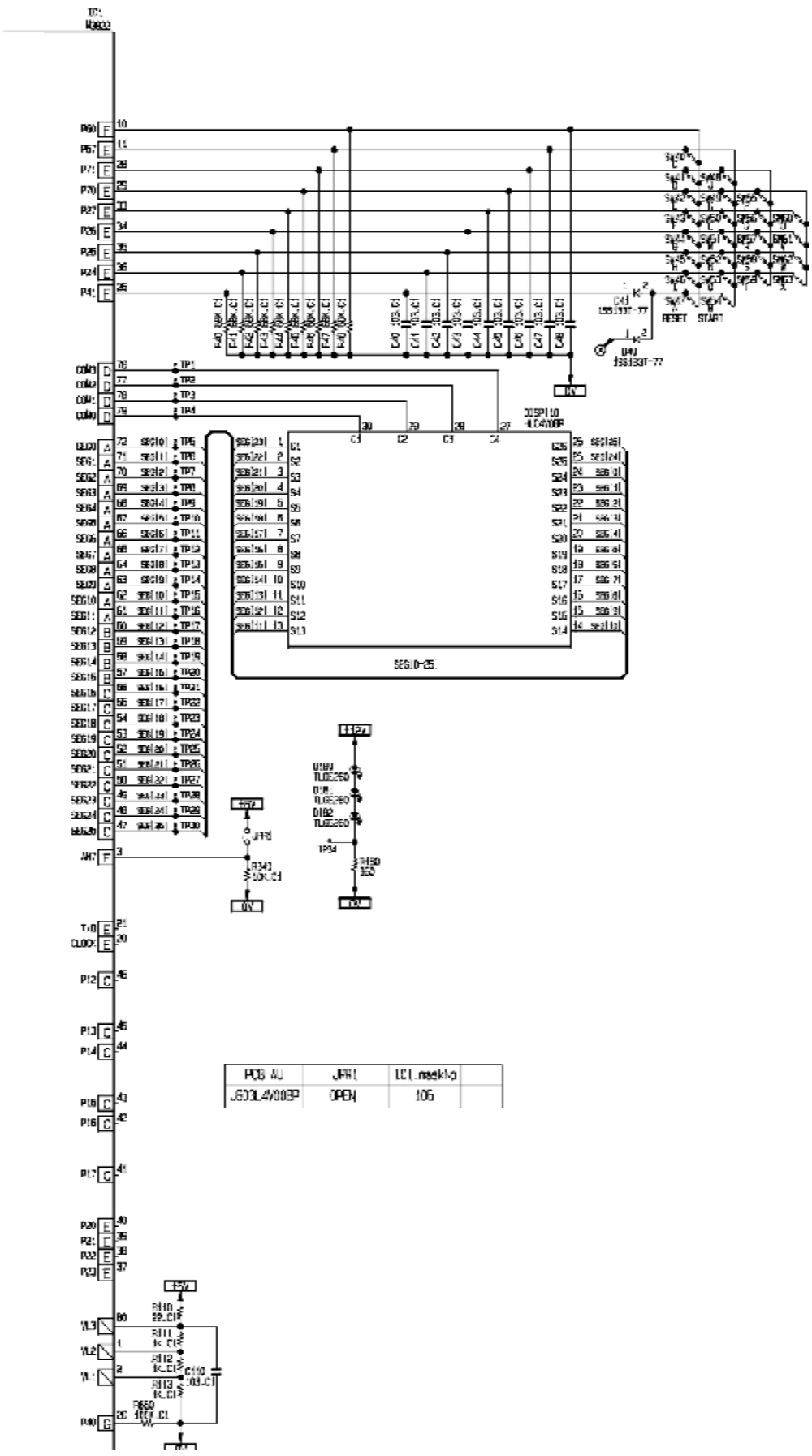
20. Noise filter component parts

Ref. No.	Part No.	Part Name & Description	Qty	Remarks
R1	ERG1SJ753P	Resistor	1	75KW W
C1 & C2	QETJ5225KRP2CE	Capacitor	2	2.2mF
C3 & C4	ECKMNA472ME	Capacitor	2	4700pF 250V AC
L1	SC-08-E203A	Inductor	1	2.4mH
F1	E62316010BP	Fuse Holder	2	

21. Digital programmer Circuit



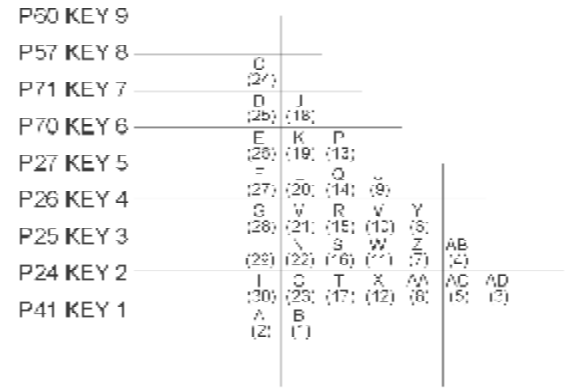
DPC Schematic 1

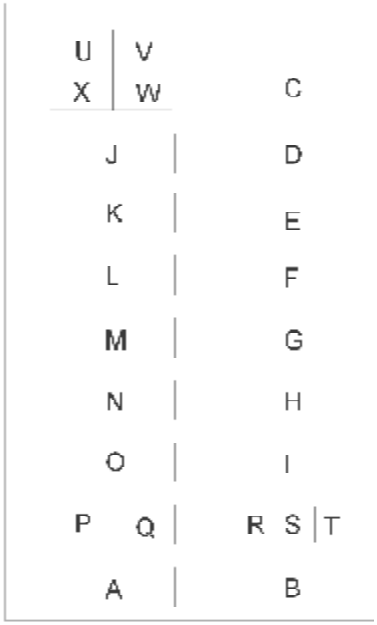


POS AU	JPR1	LCL maskio	
JG03L4V003P	OPEN	105	

DPC Schematic 2

22. Key Board Matrix





B(1)	START
A(2)	RESET
AA(3) AB(4) AC(5)	
Y(6)	
Z(7) AD(8)	
U(9)	' HOUR
V(10)	'0 MIN
W(11)	'0 SEC
X(12)	' MIN
P(13) Q(14)	STAND CLOCK
R(15) S(16)	LB/OZ UP
T(17) J(18)	DOWN POWER
K(19)	GRILL
L(20) M(21) N(22)	CONVECTION GRILL COMBINATION
O(23)	AUTO(W.DEF)
C(24) D(25) E(26)	AUTO AUTO AUTO
F(27)	AUTO
G(28) H(29)	AUTO AUTO
I(30)	AUTO

23. Digital programmer circuit parts list

23.1. E603L4L00BP DPC AU

Ref. No.	Part Name	Description	Qty	Remarks
R180	ERDS2TJ361T	Carbon Resistor	1	360R
D40,D41	AESS133T-77	Diode	2	
D180-D182	AESQTLGE260T	Green LED	3	
CX320	EFOMC8004T4	Ceramic Resonator	1	
SW40-SW63	EVQ11L05R	Push Switch	24	
C110 C20 C40-C48 C441	AECU1F103Z50	Chip Capacitor	12	10nF
C220 C221 C222 C224 C22	AECU1F104Z25	Chip Capacitor	5	100nF
R111-113 R20 R442	AERJ3GSYJ102	Chip Resistor	5	1K
R340	AERJ3GSYJ103	Chip Resistor	1	10K
R650 R229	AERJ3GSYJ104	Chip Resistor	2	100K
R110	AERJ3GSYJ220	Chip Resistor	1	22R
R440	AERJ3EKF2401	Chip Resistor 1%	1	2.4K
R331	AERJ3GSYJ471	Chip Resistor	1	470R
R224	AERJ3GSYJ472	Chip Resistor	1	4.7K
R40-R48	AERJ3GSYJ683	Chip Resistor	9	68K
R441	AERJ3EKF8202	Chip Resistor 1%	1	82K
Q224	2SC2412KT146	NPN Transistor	1	
IC1	AEIC8224H105	LSI M3822 (24K)	1	!
DISP110	AEDDHL4V00BP	LCD (NEW)	1	
CN6	AEEM19FESVKN	CONNECTOR	1	
IC220	AN6747B	Custom IC	1	

23.2. E603Y4V00BP DPC DU

Ref. No.	Part No.	Description	Qty	Remarks
ZD10	AESZMTZ5R6B	Zener Diode	1	
D221-D224	AESS133T-77	Silicon Diode	4	
D25	AESS133T-77	Silicon Diode	1	
D220	AESS1N4003E	Silicon Diode	1	
C330	ECBT1H681KB5	Capacitor	1	680PF
C440	ECBT1E103ZF5	Capacitor	1	10nF
R25,R26	ERDS1FJ563T	Resistor	2	56K 1/2 Watt
R220 R232	ERDS2TJ103T	Resistor	2	10K
R11 R226-R228	ERDS2TJ104T	Resistor	4	100K
R231	ERDS2TJ102T	Resistor	1	1.0K
R221-R223	ERDS2TJ222T	Resistor	3	2.2K
R24	ERDS2TJ223T	Resistor	1	22K
R330	ERDS2TJ333T	Carbon Resistor	1	33K
R311	ERDS2TJ391T	Resistor	1	390
R10	ERDS2TJ821T	Resistor	1	820
R310	ERSD2TJ182T	Resistor	1	1.8K
Q10	2SD1859TV2	Transistor	1	
Q226	AESAKTA200Y	PNP Transistor	1	
Q220-Q222	AESCKTC3199GR	NPN Transistor	3	
C10	EEUFC1C471B	Elect Capa	1	470uF 16 V
C12	ECEA1CKA100B	Electrolytic Capacitor	1	10uF 16V
R27	ERX12SJ1R0E	Watt Resistor	1	1R 1/2 Watt
CN3	AEEMXF00703B	3 Pin Connector (Inverter)	1	
CN7	AEEMMF00703R	3 Pin Connector (OvenThermistor)	1	

Ref. No.	Part No.	Description	Qty	Remarks
CN4	AEEMXF00D04W	4 Pin Connector	1	
C25(COVER)	A6219-1850	Capacitor Cover (small)	1	
RY2 RY3 RY6	AEBGG5N1A12	12 V Relay	3	
RY1 RY4 RY5	AEGG5G1A12	12 V Relay	3	
CN5	AEEM19FEBVKN	19 Pin Connector	1	
CN1	AEEMXD55511W	11 Pin Connector	1	
IC25	AEICP25011HL	Photocoupler IC	1	
D26	AESTS1WBA60B	Diode Bridge (600V)	1	
C25	ECA2WHG100E	Electrolytic Capacitor	1	10uF 450V
BZ310	EFBAH20C001	2KHz Buzzer	1	
D2,D3	ERZV10D112C1	Varistor	2	1100V
D1	ERZV10D511CS	Varistor	1	510V
IC10	ETXMJ197X1BG	Switching Power Supply	1	

S-4V00BP / / / / SM